

Welcome to your CDP Water Security Questionnaire 2023

W0. Introduction

W0.1

(W0.1) Give a general description of 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. 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. 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.

W-MM0.1a/W-CO0.1a

(W-MM0.1a/W-CO0.1a) Which activities in the metals and mining and coal sectors does your organization engage in?

Activity	Details of activity
Processing	Copper Gold Platinum group metals Silver Nickel Zinc Lead Other non-ferrous materials processing, please specify Selenium, Tellurium, Tin, Bismuth

W0.2

(W0.2) State the start and end date of the year for which you are reporting data.

	Start date	End date
Reporting year	Januar 1, 2022	Dezember 31, 2022

W0.3

(W0.3) Select the countries/areas in which you operate.

- Belgium
- Bulgaria
- Finland
- Germany
- Italy
- Spain
- United States of America

W0.4

(W0.4) Select the currency used for all financial information disclosed throughout your response.

- EUR

W0.5

(W0.5) Select the option that best describes the reporting boundary for companies, entities, or groups for which water impacts on your business are being reported.

- Companies, entities or groups over which operational control is exercised

W0.6

(W0.6) Within this boundary, are there any geographies, facilities, water aspects, or other exclusions from your disclosure?

Yes

W0.6a

(W0.6a) Please report the exclusions.

Exclusion	Please explain
The three slitting centers in Dolny Kubin (Slovakia), Smethwick (UK) and Mortara (Italy), and the flat-rolled products fabrication site in Zutphen (Netherlands) have been sold in mid-2022 and have therefore been excluded.	<p>All production sites that are majority owned by Aurubis (>50%) are included in the CDP reporting. However, parts of the flat rolled products segment (FRP) have been sold by Aurubis, i.e., the Zutphen (Netherlands) site as well as the slitting centers in Birmingham (United Kingdom), Dolný Kubín (Slovakia), and Mortara (Italy); the sale was closed on July 29, 2022.</p> <p>The three slitting centers were not included in 2022 nor in 2021 due to the negligible impact of these centers, with each having fewer than 25 employees. Moreover, the slitting centers as well as the Zutphen site were not included in the reporting for 2022 despite being majority owned by Aurubis during parts of the year, as Aurubis does not have access to the relevant data any more due to the selling.</p>

W0.7

(W0.7) 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

W1. Current state

W1.1

(W1.1) Rate the importance (current and future) of water quality and water quantity to the success of your business.

	Direct use importance rating	Indirect use importance rating	Please explain

Sufficient amounts of good quality freshwater available for use	Vital	Vital	<p>Importance of sufficient amount of good quality freshwater for intake (in direct as well as indirect parts of our value chain) is rated as vital because it is relevant for securing the direct and indirect operation.</p> <p>The water is used mainly for production processes and cooling purposes in direct and indirect operation. More than 90% of water withdrawal is used directly from surface waters (rivers, lakes, canals), so the water should not exceed a certain temperature, should contain little solid matter and should not be too high in salt content.</p> <p>Future water dependency is likely to remain similar, as water withdrawals from sites are subject to marginal fluctuations due to our operation processes. However, new installations will operate with a significantly lower water demand by increased number of cooling water cycles.</p> <p>“High quality” freshwater of potable standard is not required for operation but is relevant for drinking water supply from municipal water for all employees in direct and indirect parts of our value chain.</p>
Sufficient amounts of recycled, brackish and/or produced water available for use	Neutral	Neutral	<p>Sufficient amounts of recycled, brackish and/or produced water is not decisive for us, neither for water use in direct nor in indirect operation, since availability of good quality freshwater is required for production processes (see above). Therefore, it is rated as “neutral” for both direct and indirect use.</p> <p>The demand for direct and indirect water use will remain similar in the future, except the expected use of recycled rainwater, as our processes do not allow the use of recycled and brackish water.</p>

W1.2

(W1.2) Across all your operations, what proportion of the following water aspects are regularly measured and monitored?

	% of sites/facilities/operations	Frequency of measurement	Method of measurement	Please explain
Water withdrawals – total volumes	100%	Continuously	<p>Measurements of the volumes of all water withdrawals are carried out continuously by using permanently installed flow meters at the sites.</p> <p>Measurements are monitored regularly and the results are continuously available (e.g. by real-time monitoring in an online operation system at Hamburg site).</p>	<p>The volumes of water withdrawals are measured continuously, and the total volumes are regularly (at least yearly) monitored for all sites. More than 80 % of total volumes of water withdrawals of Aurubis group takes place at the Hamburg site.</p> <p>Total volumes of water withdrawals are part of our Environmental KPIs, which are provided annually by the environmental manager of the individual sites and verified annually by independent external auditors. The total volumes of groupwide water withdrawals are officially reported in the yearly published environmental report.</p> <p>The term 'sites' relates to our different geographic operations /</p>

				production sites (see definition in question W0.5 and W0.6).
Water withdrawals – volumes by source	100%	Continuously	<p>Measurements of all water withdrawals by source are carried out continuously by using permanently installed flow meters at the sites.</p> <p>Measurements are monitored and continuously available (e.g. by real-time monitoring in an online operation system at Hamburg site).</p>	<p>The volumes of water withdrawals by source are measured continuously, and regularly monitored for all sites.</p> <p>Volumes of water withdrawals by source are part of our Environmental KPIs, which are provided annually by the environmental manager of the individual sites and verified annually by independent external auditors. The volumes by source of groupwide water withdrawals are officially reported in the yearly published environmental report.</p>
Entrained water associated with your metals & mining and/or coal sector activities - total volumes [only metals and	Not relevant			Entrained water (water in the raw material) is not relevant since we do not own or have holdings in mines (the question is only

mining and coal sectors]				<p>relevant for the mining sector). Our raw materials are typically dry. This water aspect is also not expected to be relevant in the future.</p>
Water withdrawals quality	100%	Daily	<p>Measurements of key parameters are conducted through direct monitoring of continuous measurements (mainly for temperature) and/or analysis of samples taken automatically or manually, which are subsequently analyzed in laboratories. Key parameters to determine the suitability of the water for its intended use are typically:</p> <ul style="list-style-type: none"> - temperature - content of solid matter - salt content 	<p>Relevance of this water aspect was considered: Measuring and monitoring of the quality of water withdrawals is relevant, and conducted, at the sites where water is withdrawn from surface waters; at the sites where only municipal water is used, this is not relevant. 57% of our sites withdraw surface water.</p> <p>Key measurements required to ensure suitability of the water quality are carried out frequently (typically daily), depending on the specific requirements. Extended measurements are carried out several times a year (e.g. at Hamburg site by manual sampling</p>

				<p>and lab testing). This also allows us to check the water quality before and after operation in order to prevent deterioration of the water. More than 80 % of total volumes of water withdrawals of Aurubis group takes place at the Hamburg site (e.g. water quality from river Elbe is measured and monitored at Hamburg site).</p>
Water discharges – total volumes	100%	Continuously	<p>Measurements are carried out continuously by using permanently installed flow meters. Measurements are monitored regularly and continuously available (e.g. by real-time monitoring in an online operation system at Hamburg site).</p>	<p>Volumes of water discharges (m³) are measured continuously, and the total volumes are regularly monitored for all sites. The total volumes are part of our Environmental KPIs, which are provided annually by the environmental manager of the individual sites and verified annually by independent external auditors. The total volumes of groupwide water discharges are officially reported in the</p>

				yearly published environmental report.
Water discharges – volumes by destination	100%	Continuously	<p>Measurements are carried out continuously by using permanently installed flow meters.</p> <p>Measurements are monitored and continuously available (e.g. by real-time monitoring in an online operation system at Hamburg site).</p>	<p>Volumes of water discharges by destination are regularly measured and monitored for all sites. Total volumes of water discharges by destination are part of our Environmental KPIs, which are annually provided by the environmental manager of the individual sites and verified annually by independent external auditors. The volumes of groupwide water discharges by destination are officially reported in the yearly published environmental report.</p>
Water discharges – volumes by treatment method	Not relevant			<p>All contaminated effluents (such as process water, surface run-off or direct cooling water) are treated prior to discharge by applying a tertiary treatment including filtration</p>

				<p>and chemical precipitation to remove suspended solids and dissolved metals. Treatment takes place on site in most cases, or in some cases by a third party (municipal treatment plant). In all cases the discharged water complies with regulatory requirements and strict standards. The permitted water discharge quality is thus the leading indicator for our water discharges. Therefore, water discharge volumes by treatment method are not considered as relevant, and not expected to be considered as relevant in the future.</p>
Water discharge quality – by standard effluent parameters	100%	Yearly	Site-specific measurements are carried out according to the respective permits, e.g. at Hamburg site by continuous self-monitoring through manual sampling and lab	Relevance of this water aspect was considered: Measuring and monitoring of the water discharge quality is relevant, and conducted, for the sites with direct discharge to water bodies, and

			<p>testing, as well as spot sampling by the authority without prior notice.</p>	<p>for the sites with indirect discharge to municipal wastewater treatment plants according to the respective permits. This applies to 86% of our sites.</p> <p>For our operations, we consider metal emissions (metal concentration and metal load) as leading parameters for “Water discharge quality”. The measurements and monitoring also allow us to check the water quality before and after operation to prevent deterioration of the water.</p> <p>Metal emissions to waterbodies are part of our Environmental KPIs, which are provided annually by the environmental manager of the individual sites and verified annually by independent external auditors. Groupwide metal emissions to</p>
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				waterbodies are officially reported in the yearly published environmental report.
Water discharge quality – emissions to water (nitrates, phosphates, pesticides, and/or other priority substances)	100%	Yearly	Site-specific measurements are carried out according to the respective permits, e.g. at Hamburg site by continuous self-monitoring through manual sampling and lab testing, as well as spot sampling by the authority without prior notice.	<p>Nitrates, phosphates, and pesticides have no or only minor relevance for our operations, i.e. metals production.</p> <p>Metals which are priority substances according to the water framework directive are part of the measurements of metal emissions to water (cf. answer to "Water discharge quality – by standard effluent parameters" above), but not separately monitored and reported. We consider the metal emissions to water as the leading indicator for our water discharge quality .</p>
Water discharge quality – temperature	100%	Continuously	For temperature measurements on site level, we use regularly maintained sensors to	Relevance of this water aspect was considered: Temperature of water discharge is measured and

			<p>monitor temperature in effluent water / wastewater, e.g. fixed installed thermometers that provide real-time online measurements at Hamburg site.</p>	<p>monitored at all the sites where temperature is a relevant parameter (mainly sites that have a direct discharge to waterbodies); this applies to 64% of our sites. More than 80 % of water discharge of Aurubis group takes place at the Hamburg site, where temperature is part of the parameters that are measured and monitored.</p>
Water consumption – total volume	100%	Continuously	<p>Resulting from calculation: total volumes of water withdrawals minus total volumes of water discharges.</p> <p>Measurements of the volumes of all water withdrawals and of all water discharges are carried out continuously by using permanently installed flow meters at the sites.</p> <p>Measurements are monitored and continuously available (e.g. by</p>	<p>Total volume of water consumption is calculated based on the difference between the two environmental KPIs</p> <p>1) volumes of water withdrawals 2) (minus) volumes of water discharges.</p> <p>Both input parameters are measured continuously, and the resulting consumption is monitored for all sites on a yearly basis, at least.</p> <p>Water</p>

			real-time monitoring in an online operation system at Hamburg site).	consumption is part of our Environmental KPIs, which are provided annually by the environmental manager of the individual sites and verified annually by independent external auditors. The total volume of groupwide water consumption is officially reported in the yearly published environmental report.
Water recycled/reused	100%	Continuously	Site-specific measurements are carried out by using permanently installed flow meters, e.g. at Hamburg site for the treatment process of spent electrolyte and the subsequent return to the electrolysis process, or the reuse of rainwater in the processes (continuous monitoring of direct connection via flow meter).	<p>Relevance of this water aspect was considered: Water recycled/reused is measured, accounted and monitored in the water balance on site level; however, this not part of the annual external verification on group level.</p> <p>All sites have implemented measures to reuse or recycle water where possible in order to reduce freshwater input or to reduce generation of</p>

				<p>wastewater, and the sites will continue to develop and realize new such measures.</p> <p>Examples are reuse of water from slag granulation, reuse of surface run-off, use of closed-circuit cooling systems, recycling of pickling solutions or rinse water, reuse of water from flotation process, etc.</p>
The provision of fully-functioning, safely managed WASH services to all workers	100%	Quarterly	Sanitary wastewater is sampled, measured and monitored regularly (typically several times a year with different frequencies, and on demand) by manual sampling and lab testing.	<p>Fully-functioning, safely managed WASH services are provided to all workers at all sites.</p> <p>Compliance with the permitted values is also checked by the authorities on regular basis.</p>

W1.2b

(W1.2b) What are the total volumes of water withdrawn, discharged, and consumed across all your operations, how do they compare to the previous reporting year, and how are they forecasted to change?

	Volume (megaliters/year)	Comparison with previous	Primary reason for comparison with previous reporting year	Five-year forecast	Primary reason for forecast	Please explain
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		reporting year				
Total withdrawals	70.700	About the same	Increase/decrease in business activity	About the same	Increase/decrease in business activity	<p>The total water withdrawals in 2022 were about the same / only slightly lower (- 9%) than in 2021. The main reason was a planned maintenance shutdown at the Hamburg site that affected the groupwide water use, as more than 80 % of total water withdrawals take place at Hamburg site.</p> <p>For water volumes, we have defined a threshold of >15% when changes compared to the previous year are considered as higher/lower ; an</p>

						<p>automatic plausibility check has been implemented in our IT systems requesting closer examination .</p> <p>This KPI is verified yearly by external auditors.</p> <p>According to current estimations, water withdrawals are expected to stay about the same in five years (threshold: fluctuations <15% compared to current average volumes) because two developments are estimated to compensate each other: On the one hand, we are planning additional</p>
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						<p>investments in water-smart technologies / processes to minimize water use in the coming years, such as treatment and recycling of internal process water, reduction of cooling water, etc. On the other hand, we are planning to increase our business activity, and potential acquisitions, which go along with additional water uses, e.g. at our new site Aurubis Richmond (Georgia, USA) which is currently under construction.</p>
Total discharges	66.400	About the same	Increase/decrease in business activity	About the same	Increase/decrease in business activity	The total water discharges

						<p>in 2022 were about the same / only slightly lower (- 6%) than in 2021. The main reason was a planned maintenance shutdown at the Hamburg site that affected the groupwide water use, as more than 80 % of total water withdrawals take place at Hamburg site.</p> <p>For water volumes, we have defined a threshold of >15% when changes compared to the previous year are considered as higher/lower ; an automatic plausibility check has been implemented</p>
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						<p>d in our IT systems requesting closer examination .</p> <p>This KPI is verified yearly by external auditors.</p> <p>According to current estimations, water discharges are expected to stay about the same in five years (threshold: fluctuations <15% compared to current average volumes). On the one hand, we are planning additional investments in water-smart technologies / processes to minimize water use in the coming years, such as treatment and</p>
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						recycling of internal process water, reduction of cooling water, etc. On the other hand, we are planning to increase our business activity, and potential acquisitions, which go along with additional water uses, e.g. at our new site Aurubis Richmond (Georgia, USA) which is currently under construction .
Total consumption	4.300	Much lower	Increase/decrease in business activity	About the same	Increase/decrease in business activity	The total water consumption in 2022 was much lower than in 2021 (-43%). The main reason was a planned maintenance shutdown at the

						<p>Hamburg site that affected the groupwide water use, as more than 80 % of total water withdrawals take place at Hamburg site. Water withdrawals and water discharges depend on various factors, such as weather-related factors (e.g. amount of precipitation and evaporation) as well as production-related factors (e.g. increased evaporation during production processes and measurement deviations); these effects become more visible in the difference of</p>
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						<p>the two indicators, which result in the water consumption.</p> <p>For water volumes, we have defined a threshold of >15% when changes compared to the previous year are considered as higher/lower ; an automatic plausibility check has been implemented in our IT systems requesting closer examination .</p> <p>This KPI is verified yearly by external auditors.</p> <p>According to current estimations, water consumption is expected to</p>
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						<p>stay about the same in five years (threshold: fluctuations <15% compared to current average volumes), although estimations are less robust in this case compared to water withdrawals and discharges (cf. explanation above). On the one hand, we are planning additional investments in water-smart technologies / processes to minimize water use in the coming years, such as treatment and recycling of internal process water, reduction of cooling water, etc.</p>
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						On the other hand, we are planning to increase our business activity, and potential acquisitions, which go along with additional water uses, e.g. at our new site Aurubis Richmond (Georgia, USA) which is currently under construction .
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W1.2d

(W1.2d) Indicate whether water is withdrawn from areas with water stress, provide the proportion, how it compares with the previous reporting year, and how it is forecasted to change.

	Withdrawals are from areas with water stress	% withdrawn from areas with water stress	Comparison with previous reporting year	Primary reason for comparison with previous reporting year	Five-year forecast	Primary reason for forecast	Identification tool	Please explain
Row 1	Yes	1-10	About the same	Increase/decrease in business activity	About the same	Increase/decrease in business activity	WRI Aqueduct	8.6 % of the water was withdrawn from areas with water stress in 2022 (7.6 % in 2021).

							<p>Percentage is about the same as in previous reporting year, because only a small part of total water withdrawals is taken from areas with water stress, and fluctuations of increase/decrease in business activities at the different sites in areas with/without water stress more or less compensated each other.</p> <p>For our sites, no relevant impacts are experienced in the areas defined as "water stress areas" by WRI Aqueduct, neither in terms of water availability, water quality, nor water accessibility. An external expert carried</p>
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								<p>out an environmental risk assessment for us, which also revealed no indications of the above-mentioned potential impacts. Areas with water stress identified by using WRI Aqueduct version 3.0. (baseline data, annual temporal resolution, indicator water stress, default weighting). Water stress proportion calculated according to CDP requirements by dividing „volume withdrawn in stress areas” with “total volume for company-wide withdrawals” (stress areas are defined as areas identified as equal to/greater</p>
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								<p>than "High": 40-80% according to WRI Aqueduct).</p> <p>We expect a similar result in a five-year forecast, although such estimation depends on future fluctuations and is only relative: a reduction of water withdrawal from areas without water stress leads to a higher proportion / a higher value for this indicator, even if impacts in areas with water stress stay the same or decrease to a certain extent. Moreover, we are planning to increase our business activity, and potential acquisitions, especially the</p>
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									latter may happen to be in areas with water stress.
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W1.2h

(W1.2h) Provide total water withdrawal data by source.

	Relevance	Volume (megaliters/year)	Comparison with previous reporting year	Primary reason for comparison with previous reporting year	Please explain
Fresh surface water, including rainwater, water from wetlands, rivers, and lakes	Relevant	68.400	About the same	Increase/decrease in business activity	<p>The amount of water withdrawal from fresh surface water has remained about the same compared to 2021. The volume has not changed significantly, as there was no specific occurrence that significantly affected the sites water withdrawal from fresh surface waters apart from usual fluctuations of business activities.</p> <p>We have defined a threshold for comparison with the previous reporting year "higher/lower" at a deviation of more than 15 %.</p> <p>This KPI is</p>

					verified yearly by external auditors.
Brackish surface water/Seawater	Not relevant				Water withdrawal from brackish surface water/seawater is not relevant, because Aurubis sites do not withdraw water from brackish surface water / seawater.
Groundwater – renewable	Relevant	400	Lower	Increase/decrease in business activity	<p>The amount of water withdrawal from groundwater has decreased compared to 2021. Main reasons are related to developments at the few sites that withdraw groundwater, and consist in reduction of a overall water withdrawals, and a shift in the source for the respective sites. The threshold for comparison with the previous reporting year "higher/lower" is defined as a deviation of more than 15 %.</p> <p>This KPI is verified yearly by external auditors.</p>

Groundwater – non-renewable	Not relevant				Water withdrawal from non-renewable groundwater is not relevant, because Aurubis sites do not withdraw water from non-renewable groundwater.
Produced/Entrained water	Not relevant				Water withdrawal from produced/entrained water is not relevant, because Aurubis sites do not withdraw water from produced/entrained water.
Third party sources	Relevant	2.300	About the same	Increase/decrease in business activity	The amount of water withdrawal from third party water has remained about the same compared to 2021. Third party sources mean municipal water and other (demineralized water, steam, etc.). The volume has not changed significantly, as there was no specific occurrence that significantly affected the sites water withdrawal from third party sources apart from usual

					<p>fluctuations of business activities. The threshold for comparison with the previous reporting year "higher/lower" is defined as a deviation of more than 15 %.</p> <p>This KPI is verified yearly by external auditors.</p>
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W1.2i

(W1.2i) Provide total water discharge data by destination.

	Relevance	Volume (megaliters/year)	Comparison with previous reporting year	Primary reason for comparison with previous reporting year	Please explain
Fresh surface water	Relevant	65.300	About the same	Increase/decrease in business activity	The amount of water discharged to fresh surface water has remained about the same / only slightly lower (-5%) than in 2021. The main reason was a planned maintenance shutdown at the Hamburg site that affected the groupwide water use and discharge, as more than 80 % of total water discharge takes

					<p>place at Hamburg site. The threshold for comparison with the previous reporting year "higher/lower" is defined as a deviation of more than 15 %.</p> <p>This KPI is verified yearly by external auditors.</p>
Brackish surface water/seawater	Not relevant				Water discharge in brackish surface water/seawater is not relevant, because Aurubis sites do not discharge water in brackish surface water/seawater.
Groundwater	Not relevant				Water discharge in groundwater is not relevant, because Aurubis sites do not discharge water in groundwater.
Third-party destinations	Relevant	1.100	About the same	Increase/decrease in business activity	The amount of water discharged to third-party destinations including municipal wastewater plants has remained about the same compared to 2021. The

					<p>volume has not changed significantly, as there was no specific occurrence that significantly affected the sites water discharge to third party destinations.</p> <p>The threshold for comparison with the previous reporting year "higher/lower" is defined as a deviation of more than 15 %. KPI is verified externally.</p>
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W1.2k

(W1.2k) Provide details of your organization’s emissions of nitrates, phosphates, pesticides, and other priority substances to water in the reporting year.

	Emissions to water in the reporting year (metric tonnes)	Category(ies) of substances included	List the specific substances included	Please explain
Row 1		Priority substances listed under the EU Water Framework Directive	Cadmium, lead, mercury, nickel	Metals which are priority substances according to the water framework directive are part of the measurements of metal emissions to water (cf. answer to "Water discharge quality – by standard effluent parameters" above), but not separately monitored and reported. We consider the metal emissions to water as the leading indicator for our water discharge quality.

W1.3

(W1.3) Provide a figure for your organization's total water withdrawal efficiency.

	Revenue	Total water withdrawal volume (megaliters)	Total water withdrawal efficiency	Anticipated forward trend
Row 1	18.520.522.000	70.700	261.959,292786422	<p>Overall, water withdrawal of Aurubis' group has shown a decreasing trend over the years. Due to continuous efficiency improvement measures, we expect to achieve further increases in water withdrawal efficiency in the future. However, it should be considered that various influencing factors (e.g. extreme weather conditions), can lead to slight upward or downward fluctuations.</p> <p>Note: Aurubis AGs operating revenue is stated for FY21/22</p>

W-MM1.3/W-CO1.3

(W-MM1.3/W-CO1.3) Do you calculate water intensity information for your metals and mining activities?

Yes

W-MM1.3a/W-CO1.3a

(W-MM1.3a/W-CO1.3a) For your top 5 products by revenue, provide the following intensity information associated with your metals and mining activities.

Product name	Numerator: Water aspect	Denominator	Comparison with previous reporting year	Please explain
Copper production	Other, please specify Metal emissions to water	Other, please specify Ton of copper/multimetal output	About the same	The reduction of metal emissions to water in Aurubis group copper production is part of our environmental targets and within the scope of our sustainability strategy: Reducing specific metal emissions to water by 50 % in g/t of copper output until 2022

			<p>compared to 2012. A 63% total reduction was achieved in 2022. Thus, our metal emissions to water are already on a very low level and will be further reduced in future.</p> <p>Nevertheless, slight upward or downward fluctuations occurred during the last years and are likely to occur also in the future. The change from previous year is stated as “About the same” as the deviation from previous year is <15 %. The metal emissions to water per ton of copper output has not changed significantly, as there was no specific occurrence that significantly affected the sites water emissions apart from usual fluctuations of business activities. This KPI is verified yearly by external auditors.</p> <p>As one of our group environmental targets and within the sustainability strategy, we consider this indicator a decisive KPI which underlines Aurubis’ ambitions in sustainability and commitment to further implementing sustainable development in project evaluations and in our operations.</p> <p>We report water intensity information on metal emissions to water bodies and water withdrawals, both related to our group copper production (ton of copper output from primary and secondary copper production sites). Copper is one of our top five products by revenue. Other top products by revenue, as for example Cu wire rod, Cu shapes and strip/bars/profiles, are related to the copper production, as the</p>
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				<p>copper cathode is the basic copper product and starting material for further processing into high quality fabricated copper products (like e.g. wire rod). Therefore, we consider it as reasonable and appropriate for our activities to indicate water intensity information only for copper which incorporates other top products by revenue.</p>
Copper production	<p>Other, please specify</p> <p>Water withdrawal</p>	<p>Other, please specify</p> <p>Ton of copper/multimetal output</p>	<p>About the same</p>	<p>Conserving water resources is one of our environmental objectives to minimize the environmental impact of our business activities, described also in our environmental policy. Compared to the reference year 2012, water withdrawal per ton of copper was reduced by 32 %. Thus, our water withdrawal intensity has been significantly reduced during the last years to a very low level, and we intend to further reduce also in the future. Due to various influencing factors (e.g. extreme weather conditions), slight upward or downward fluctuations occur and may also occur in the future.</p> <p>The change from previous year is considered as lower, as the deviation from previous year is > 15 %. Main reason was the maintenance shutdown at our Hamburg site, which led to lower volumes of water withdrawals, while copper production was partly compensated by production at the other sites. This KPI is verified yearly by external auditors.</p> <p>To ensure continuous improvement of environmental performance, we identify potentials for improvement</p>

				<p>of our water management. For example, a roundtable for water management is in place, where potential water-related measures for improvement are identified by corporate environmental protection together with the sites and guided by an external consultant.</p> <p>We report water intensity on metal emissions to water bodies and water withdrawals, both related to our group copper production (ton of copper output from primary and secondary copper production sites). Copper is one of our top five products by revenue. Other top products by revenue, as for example Cu wire rod, Cu shapes and strip/bars/profiles, are related to the copper production as the copper cathode is the basic copper product and starting material for further processing into high quality fabricated copper products. Therefore, we consider it as reasonable and appropriate for our activities to indicate water intensity information only for copper which incorporates other top products by revenue.</p>
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W1.4

(W1.4) Do any of your products contain substances classified as hazardous by a regulatory authority?

Products contain hazardous substances	
Row 1	Yes

W1.4a

(W1.4a) What percentage of your company's revenue is associated with products containing substances classified as hazardous by a regulatory authority?

Regulatory classification of hazardous substances	% of revenue associated with products containing substances in this list	Please explain
Candidate List of Substances of Very High Concern for Authorisation above 0.1% by weight (EU Regulation)	Less than 10%	<p>There are two products from our product portfolio that are on the so-called Candidate List, namely arsenic trioxide and lead.</p> <p>These substances, as most of our products in general, are parent materials to produce other goods for which their properties are required for specific functions, such as batteries that typically require lead and/or nickel sulfate. The materials we produce are registered in REACH-compliant dossiers that are regularly updated to meet current requirements and incorporate new findings, and they may be hazardous, or not. We provide safety data sheets to inform customers about hazardous substances, like lead, nickel sulfate, and sulfuric acid, as classified according to the EU CLP regulation. These safety data sheets reflect the information in the registration dossiers and provide guidance for handling materials safely throughout the value chain. Additionally, we offer safety information sheets for non-hazardous substances, such as copper and iron silicate, based on the format and content of safety data sheets.</p> <p>We can also issue plant certificates that disclose material properties for each delivery. By strictly following load securing regulations and maximum permitted loads, we minimize transportation risks associated with our products.</p>
Other, please specify Technical Rules for Hazardous Substances "Lead" (TRGS 505) (German rules)	Less than 10%	<p>In 2021, Germany implemented the new Technical Rules for Hazardous Substances "Lead" (TRGS 505), setting a lower limit value for lead in the blood. We have updated our risk assessments accordingly and implemented necessary technical, organizational, and/or personal protective measures.</p>

W1.5

(W1.5) Do you engage with your value chain on water-related issues?

	Engagement
Suppliers	Yes
Other value chain partners (e.g., customers)	Yes

W1.5a

(W1.5a) Do you assess your suppliers according to their impact on water security?

Row 1

Assessment of supplier impact

No, we do not currently assess the impact of our suppliers, but we plan to do so within the next two years

Please explain

We mandate our business partners to implement and uphold processes and procedures to minimize environmental impacts and risks while consistently enhancing their environmental performance. This encompasses areas like resource efficiency, including water usage, and minimizing emissions to water. These expectations are detailed in the Aurubis Business Partner Code of Conduct.

As part of our business partner screening process, our business partners are assessed among other things for their environmental performance including water consumption, water reduction measures and related policies. New business partners also go through this screening process.

Finally, we also conduct site visits which among other things focus on business partner's environmental management systems including water consumption.

2030 target: The improvement plan implemented has significantly reduced the risk for any supplier identified as high risk which includes also suppliers' environmental performance.

W1.5b

(W1.5b) Do your suppliers have to meet water-related requirements as part of your organization's purchasing process?

	Suppliers have to meet specific water-related requirements	Comment
Row 1	No, and we do not plan to introduce water-related requirements within the next two years	We are talking about water related issues with our suppliers and have first pilot projects with some of them. However as of today no requirements on a broad basis are planned.

W1.5d

(W1.5d) Provide details of any other water-related supplier engagement activity.

Type of engagement

Information collection

Details of engagement

Other, please specify

Assess business partner's environmental performance, including water consumption, water reduction measures, and related policies.

% of suppliers by number

Unknown

Rationale for your engagement

As part of our business partner screening process, our business partners are assessed among other things for their environmental performance including water consumption, water reduction measures and related policies. New business partners also go through our business partner screening process.

Moreover, we have included the efficient use of water into our Business Partner Code of Conduct. All our suppliers need to accept this code of conduct.

Impact of the engagement and measures of success

As a consequence of the business partner screening process, we recommend and agree with the supplier on improvement measures.

Comment

W1.5e

(W1.5e) Provide details of any water-related engagement activity with customers or other value chain partners.

Type of stakeholder

Customers

Type of engagement

Education / information sharing

Details of engagement

Educate and work with stakeholders on understanding and measuring exposure to water-related risks

Rationale for your engagement

We have included the efficient use of water into our Business Partner Code of Conduct.

Impact of the engagement and measures of success

All our business partners need to accept this code of conduct.

Type of stakeholder

Customers

Type of engagement

Education / information sharing

Details of engagement

Share information about your products and relevant certification schemes

Rationale for your engagement

The metals and other materials that we produce could have an impact on waterbodies during improper use. Therefore, we inform our customers about safe handling, relevant regulations, etc by the means of safety data sheets (for hazardous products, as legally required), or via voluntary, so-called safety information sheets (for non-hazardous products), based on the format of safety data sheets.

Impact of the engagement and measures of success

By providing hazard information on all our products, we take over material stewardship beyond legal requirements and support our customers to avoid accidents or negative impacts on human health or the environment, including water. The information given is extracted from the REACH dossiers of our products, which have been extensively tested and assessed according to the current requirements. During the past years, customers have come back to us for specific questions regarding the safety data sheets resp. safety information sheets, but we have not received any notice of impacts from our customers relating to the information given.

W2. Business impacts

W2.1

(W2.1) Has your organization experienced any detrimental water-related impacts?

No

W2.2

(W2.2) In the reporting year, was your organization subject to any fines, enforcement orders, and/or other penalties for water-related regulatory violations?

	Water-related regulatory violations	Comment
Row 1	No	Previously identified issues at our Buffalo site have been corrected in the meantime.

W3. Procedures

W3.1

(W3.1) Does your organization identify and classify potential water pollutants associated with its activities that could have a detrimental impact on water ecosystems or human health?

	Identification and classification of potential water pollutants	How potential water pollutants are identified and classified
Row 1	Yes, we identify and classify our potential water pollutants	<p>Environmental aspects including potential impacts of water pollutants on water quality, are being identified and evaluated as part of the environmental management systems that are in place, and certified according to the standard ISO 14001, at all our production sites.</p> <p>The evaluations are based on national and EU regulations, most importantly the EU Water Framework Directive, and in Germany the Federal Water Act (Wasserhaushaltsgesetz). In addition, studies and assessments are being conducted and documented in registration dossiers according to EU REACH Regulation.</p> <p>Our plants need environmental permits as a condition for operating them. During the environmental permitting procedures, assessments of potential impacts on the environment incl. water, and how such impacts will be avoided by the plant are an integral part of the process. The environmental permits that are issued by the authorities set strict requirements to avoid potential environmental impacts. For example, limit values for the concentration and/or load of metals in direct water discharges are typically set, and need to be complied with. The permits also set requirements on how, and in which frequency, the compliance with the permit requirements has to be monitored by measurements, sampling and analyses.</p>

W3.1a

(W3.1a) Describe how your organization minimizes the adverse impacts of potential water pollutants on water ecosystems or human health associated with your activities.

Water pollutant category

Inorganic pollutants

Description of water pollutant and potential impacts

Water at our production sites may contain metals in particular, such as copper, zinc, and lead. After use, treating wastewater and thus preventing environmental pollution is one of our key responsibilities in industrial environmental protection.

Value chain stage

Direct operations

Actions and procedures to minimize adverse impacts

Assessment of critical infrastructure and storage condition (leakages, spillages, pipe erosion etc.) and their resilience

Beyond compliance with regulatory requirements

Industrial and chemical accidents prevention, preparedness, and response

Water recycling

Discharge treatment using sector-specific processes to ensure compliance with regulatory requirements

Please explain

Wastewater treatment and water discharge, for instance into the municipal wastewater system or into surface water, is regulated in the official discharge permits at all sites.

This is monitored by governmental inspections, which are supplemented by internal monitoring carried out by the plants themselves. Where needed, our plants have internal wastewater treatment facilities where process wastewaters and precipitations are cleaned using state-of-the-art technology.

Water pollutant category

Inorganic pollutants

Description of water pollutant and potential impacts

Water that contains metals, such as copper, zinc, and lead, needs to be treated to prevent environmental pollution.

Value chain stage

Supply chain

Actions and procedures to minimize adverse impacts

Requirement for suppliers to comply with regulatory requirements

Please explain

This requirement is part of our Business Partner Code of Conduct.

W3.3

(W3.3) Does your organization undertake a water-related risk assessment?

Yes, water-related risks are assessed

W3.3a

(W3.3a) Select the options that best describe your procedures for identifying and assessing water-related risks.

Value chain stage

Direct operations

Coverage

Full

Risk assessment procedure

Water risks are assessed in an environmental risk assessment

Frequency of assessment

Annually

How far into the future are risks considered?

More than 6 years

Type of tools and methods used

Tools on the market
Enterprise risk management
International methodologies and standards
Other

Tools and methods used

WRI Aqueduct
Enterprise Risk Management
Environmental Impact Assessment
Life Cycle Assessment
IPCC Climate Change Projections
ISO 14001 Environmental Management Standard
External consultants
Scenario analysis

Contextual issues considered

Water availability at a basin/catchment level
Water quality at a basin/catchment level
Stakeholder conflicts concerning water resources at a basin/catchment level

Water regulatory frameworks
Status of ecosystems and habitats
Access to fully-functioning, safely managed WASH services for all employees

Stakeholders considered

Customers
Employees
Investors
Local communities

Comment

The Risk Assessment is carried out by an external expert for all sites of Aurubis (incl. subsidiaries). While the assessment is conducted annually for the smelter sites which are most relevant for water security, the assessment of remaining sites takes place every three years. The external risk assessment is supervised by Corporate Environmental Protection in close coordination with the Aurubis sites and Corporate Risk Management. Topics of the assessments include emissions to air and water, water management, and handling hazardous substances, but also the challenges that climate change poses. In 2021, we expanded the assessment to include the additional topics of biodiversity, nature conservation, and water availability as well as flood risks.

On top we used Munich Re Climate Risk tool and analyzed our sites according to current hazards (incl. flood) and applying a scenario analysis with RCP 2.6 and 8.5 for the year 2050. In focus for scenario analysis was "flood", "drought stress", "heat stress" and "precipitation stress".

Value chain stage

Supply chain

Coverage

Partial

Risk assessment procedure

Water risks are assessed in an environmental risk assessment

Frequency of assessment

Annually

How far into the future are risks considered?

More than 6 years

Type of tools and methods used

Tools on the market
Other

Tools and methods used

Other, please specify

IPCC Climate Change Projection; Business Partner Screening is performed using a tool on the market

Contextual issues considered

- Water availability at a basin/catchment level
- Access to fully-functioning, safely managed WASH services for all employees
- Other, please specify
 - Focus on “flooding”, “drought stress”, “heat stress” and “precipitation stress” in / around our top 25 suppliers for concentrates

Stakeholders considered

- Employees
- Suppliers

Comment

We used Munich Re Climate Risk tool and analyzed our top 25 concentrate suppliers according to current hazards (incl. flood) and applying a scenario analysis with RCP 2.6 and 8.5 for the year 2050. In focus for scenario analysis was “flood”, “drought stress”, “heat stress” and “precipitation stress”.

All suppliers that have been identified as having potential medium and high risks in our business partner screening process have been considered, including the aspects: water reduction, access of employees to water of suitable quality.

W3.3b

(W3.3b) Describe your organization’s process for identifying, assessing, and responding to water-related risks within your direct operations and other stages of your value chain.

	Rationale for approach to risk assessment	Explanation of contextual issues considered	Explanation of stakeholders considered	Decision-making process for risk response
Row 1	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	For the risk report section in the annual report, climate-related risks are structured according to the Task Force on Climate-Related Financial Disclosures (TCFD) framework to provide transparency. During annual Risk Assessments for	Standard risk reporting takes place bottom-up each quarter with a Group-wide uniform reporting format. The identified risks (incl. water-related risks) and risks beyond a defined threshold are explained and evaluated based on their probability of occurrence and their business significance. Measures to manage	The Risk Management System (RMS) is outlined in a company policy, and a standardized bottom-up risk reporting process occurs quarterly using a consistent format across the organization. Within this format, identified risks, including climate-related and water-related risks, are explained and evaluated based on their likelihood

<p>risks by implementing appropriate and economically sound countermeasures. Risk management is an integral component of 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 (also considering internal and external stakeholders) and promote our risk culture. Risk management officers have been appointed for all sites, business sectors and central functions. They form a network within the Group (Risk Management Organization). The Group headquarters (CRM) manages the network. The Risk Management System (RMS) is documented in a corporate policy.</p>	<p>our smelter sites (carried out by an external expert together with the sites, supervised by Corp. Environ. dept) a wide range of water risks are considered at site level, including water availability at catchment level, but also risks with regard to water discharges. Risk related to climate change and natural hazards are considered in a separate section in the assessment, whereas water availability as well as stakeholders are also considered with regard to nature preserve and residents, also including local authorities. The final result of this water risk assessment is shared with CRM (via Corp. Environ. dept). In addition, we are actively involved in creating and maintaining good conditions for species conservation and biodiversity in our plants and their surroundings. A list of conservation</p>	<p>them are outlined. The risks registered with Group headquarters are qualitatively aggregated into risk clusters by CRM and reported to the Executive Board (EB). The report also establishes the basis for the report to the Audit Committee (AB) of the Supervisory Board and external risk reporting. In the quarterly report to the EB and the AC, 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. Please refer to Question 4.1a for a definition of substantive financial impact. Also once a year a strategic risk portfolio is reported to EB and AB focusing on risks with a time horizon up to 30 years (incl. initiated or proposed mitigating measures). Parallel to these above mentioned risk reporting processes, communication and organization, CRM is engaged in annual on-</p>	<p>and business impact, considering potential interdependencies. The risk is classified based on two criteria: either the impact on EBT (Earnings Before Tax) exceeds €50 million and the probability of occurrence is at least "medium" (approximately as likely as not), or the impact on EBT surpasses €20 million and the probability is high (more likely than not). Management measures are outlined to address these risks. The risks identified at Group headquarters are consolidated into significant risk clusters by the CRM and reported to the entire Executive Board. This report serves as the foundation for reporting to the Audit Committee of the Supervisory Board and for external risk reporting. In the quarterly report to the Executive Board and the Audit Committee, the risk clusters are assessed in terms of their likelihood of occurrence and potential impact on earnings, taking into account risk management measures.</p>
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		<p>areas in close proximity to copper production sites is included in our environmental report.</p> <p>To better understand the physical risks arising from climate change and to derive measures, we identify our climate change risks by a site-specific climate scenario analysis (IPCC Climate Change projections on RCP 2.6 and RCP 8.5), including water-related climate issues as flood, precipitation, heat and drought, also for our top 25 concentrate suppliers.</p>	<p>site risk reviews with sites and central functions and regular Jour Fixes with Corporate Energy & Climate Affairs, Environmental Protection and Sustainability for early and overarching risk identification and corresponding countermeasures for water-related risks.</p>	
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W4. Risks and opportunities

W4.1

(W4.1) Have you identified any inherent water-related risks with the potential to have a substantive financial or strategic impact on your business?

Yes, both in direct operations and the rest of our value chain

W4.1a

(W4.1a) 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, 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).

W4.1b

(W4.1b) What is the total number of facilities exposed to water risks with the potential to have a substantive financial or strategic impact on your business, and what proportion of your company-wide facilities does this represent?

	Total number of facilities exposed to water risk	% company-wide facilities this represents	Comment
Row 1	1	1-25	Based on our risk analysis using the Munich re Climate Risk Tool, we have identified that three out of our 17 facilities are exposed to flood risk, each with varying degree of severity. However, only one of our facilities in Hamburg is at risk of flooding that could have a substantive impact on our business, as defined in section 4.1a. Note that for the purpose of reporting, our definition of 'facility' is the same as our definition for a site, i.e., for which there could be several different types of factory operating in the same location (see reporting boundary in W0.5 and W0.6). Site in focus here is: Aurubis AG, Hamburg.

W4.1c

(W4.1c) By river basin, what is the number and proportion of facilities exposed to water risks that could have a substantive financial or strategic impact on your business, and what is the potential business impact associated with those facilities?

Country/Area & River basin

Germany
Elbe River

Number of facilities exposed to water risk

1

% company-wide facilities this represents

1-25

Production value for the metals & mining activities associated with these facilities

8.700.000.000

% company's total global revenue that could be affected

41-50

Comment

Data based on IFRS and FY21/22 (01.10.2021-30.09.2022)

W4.2

(W4.2) Provide details of identified risks in your direct operations with the potential to have a substantive financial or strategic impact on your business, and your response to those risks.

Country/Area & River basin

Germany

Elbe River

Type of risk & Primary risk driver

Acute physical

Flood (coastal, fluvial, pluvial, groundwater)

Primary potential impact

Reduction or disruption in 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. 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. 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. A similar event happened last year in one of our smaller plants in Stolberg where - due to torrential rain - water levels of 1.5 - 2 meters incl. mud swept through the plant leaving the whole site devastated. Adopting this lesson learned effect onto plant Hamburg the severity of such a flood event and the impacted facilities, major disruption can last for 3 months or even longer for some facilities.

Timeframe

More than 6 years

Magnitude of potential impact

High

Likelihood

Very unlikely

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

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. A similar event happened last year in one of our smaller plants in Stolberg where - due to torrential rain - water levels of 1.5 - 2 meters incl. mud swept through the plant leaving the whole site devastated. Adopting this lesson learned effect onto plant Hamburg the severity of such a flood event and the impacted facilities, major disruption can last for 3 months or even longer for some facilities. 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 for the mid-term perspective (next 10 years at least) 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 long-term perspective (20-30 years) it is very certain that these dams and flood prevention systems will have to be fundamentally upgraded and improved to protect Hamburg site.

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)

Primary response to risk

Develop flood emergency plans

Description of response

Our mitigation strategy consists of the following:

- Conducting an annual update of the physical climate risk analysis (long term) and constantly monitoring projected flood water levels (short term) to initiate response in good time. The Hamburg plant is protected by dams and levees (called Polder) that surround the peninsula Peute. These dams and levees are high enough to withstand current projected storm surge level.
- Conducting an annual flood response, emergency and evacuation trainings including maintaining a plant firefighting department for quick emergency response
- Having specific business continuity measures in place, e.g. flood-proof containers to store oil and storages for some material on floors above flood level.
- Engaging in regular exchange with the Hamburg Port Authority (HPA) which is the competent authority for flood protection in the Hamburg port area. According to the HPA, Aurubis facilities are well protected until 2050 with the current Polder and levee system. However, it is also certain that by approx. 2035, a new Polder must be built to keep the Hamburg plant protected for years beyond 2050. At this stage it is too early for an estimated Capex figure.

Recommendations from flood risk assessment 2021, to be followed up:

- Developing and implementing a repair and maintenance plan for the sewer system.
- Expanding the capacity of pipelines to increase retention and drainage capacity during heavy rain events.

Cost of response

30.000

Explanation of cost of response

The costs for Aurubis as a member of the "Polder" community gross up to approx. € 30,000 p.a. (Aurubis share). The Polder community takes care of maintenance and repair of dam and levees which protect the Peute peninsula on which Hamburg plant is located. Further costs are the costs for the Hamburg plant firefighting department. However, as the existence of the firefighting department is a legal prerequisite to run our operations, the costs related to flood response for this department cannot be directly allocated and separated. Capital expenditures for a possible increase of levees and dams to protect against higher future flood levels are not foreseen to be planned within this decade. As this risk has a long-term horizon the Capex will be invested probably in the late 2030s.

W4.2a

(W4.2a) Provide details of risks identified within your value chain (beyond direct operations) with the potential to have a substantive financial or strategic impact on your business, and your response to those risks.

Country/Area & River basin

Brazil

Not known

Stage of value chain

Supply chain

Type of risk & Primary risk driver

Chronic physical

Other, please specify

Drought stress

Primary potential impact

Supply chain disruption

Company-specific description

Please note: This risk exists also for other South American countries, especially Chile and Peru. It is not linked to one specific location, country, or river basin, but a general risk for our supply from major parts of South America.

We conducted a physical climate risk analysis that also included our top 25 copper ore concentrate suppliers (mines). Analysis was done using Munich Re Climate Change Edition and did include a scenario analysis applying RCP 2.6 and RCP 8.5 scenarios. In scenario RCP 8.5 and looking at the year 2050 half of our concentrate suppliers (mines) would be in areas of highest drought stress index. This representative sample would account for approx. 1/3 of today's concentrate consumption. Hence, the high rating of "potential impact". Nevertheless, we are optimistic that our applied measures (risk response) will provide us the right strategy to tackle this risk.

Timeframe

More than 6 years

Magnitude of potential impact

Medium-high

Likelihood

Likely

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure - minimum (currency)

Potential financial impact figure - maximum (currency)

Explanation of financial impact

Primary response to risk

Upstream
Map supplier water risk

Description of response

Our mitigation strategy consists of the following:

- further increase our supplier portfolio; as we have successfully shown in Covid crisis we are able to quickly adapt our supplier portfolio and due to our great market knowledge and established network we can very quickly fill supply gaps which can and will occur.
- due to the very long-term risk disclosed above we intensify our supplier screening to also include their exposure to water / drought risk
- engaging with our suppliers especially in mentioned South America regions we encourage them to include drought risks into their strategy by e.g. introducing desalination plants for water-saving initiatives

Cost of response

50.000

Explanation of cost of response

Value is in Euro. This is included in the overall management costs of our departments Commercial and Supply Chain Management

Country/Area & River basin

Chile
Not known

Stage of value chain

Supply chain

Type of risk & Primary risk driver

Chronic physical
Other, please specify
Drought stress

Primary potential impact

Supply chain disruption

Company-specific description

We conducted a physical climate risk analysis that also included our Top 25 concentrate suppliers (mines). Analysis was done using Munich Re Climate Change Edition and did include a scenario analysis applying RCP 2.6 and RCP 8.5 scenarios. In scenario RCP 8.5 and looking at the year 2050 half of our concentrate suppliers (mines) would be in areas of highest drought stress index. This representative sample would account for approx. 1/3 of today's concentrate consumption. Hence, the high rating of "potential impact". Nevertheless, we are optimistic that our applied measures (risk response) will provide us the right strategy to tackle this risk.

Timeframe

More than 6 years

Magnitude of potential impact

Medium-high

Likelihood

Likely

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure - minimum (currency)

Potential financial impact figure - maximum (currency)

Explanation of financial impact

Primary response to risk

Upstream
Map supplier water risk

Description of response

Our mitigation strategy consists of the following:

- further increase our supplier portfolio; as we have successfully shown in Covid crisis we are able to quickly adapt our supplier portfolio and due to our great market knowledge and established network we can very quickly fill supply gaps which can and will occur.
- due to the very long-term risk disclosed above we intensify our supplier screening to also include their exposure to water / drought risk

- engaging with our suppliers especially in mentioned South America regions we encourage them to include drought risks into their strategy by e.g. introducing desalination plants for water-saving initiatives

Cost of response

Explanation of cost of response

This is included in the overall management costs of our departments Commercial and Supply Chain Management, and reported above (cf. entry "Brazil")

Country/Area & River basin

Peru

Not known

Stage of value chain

Supply chain

Type of risk & Primary risk driver

Chronic physical

Other, please specify

Drought stress

Primary potential impact

Supply chain disruption

Company-specific description

We conducted a physical climate risk analysis that also included our Top 25 concentrate suppliers (mines). Analysis was done using Munich Re Climate Change Edition and did include a scenario analysis applying RCP 2.6 and RCP 8.5 scenarios. In scenario RCP 8.5 and looking at the year 2050 half of our concentrate suppliers (mines) would be in areas of highest drought stress index. This representative sample would account for approx. 1/3 of today's concentrate consumption. Hence, the high rating of "potential impact". Nevertheless, we are optimistic that our applied measures (risk response) will provide us the right strategy to tackle this risk.

Timeframe

More than 6 years

Magnitude of potential impact

Medium-high

Likelihood

Likely

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure - minimum (currency)

Potential financial impact figure - maximum (currency)

Explanation of financial impact

Primary response to risk

Upstream
Map supplier water risk

Description of response

Our mitigation strategy consists of the following:

- further increase our supplier portfolio; as we have successfully shown in Covid crisis we are able to quickly adapt our supplier portfolio and due to our great market knowledge and established network we can very quickly fill supply gaps which can and will occur.
- due to the very long-term risk disclosed above we intensify our supplier screening to also include their exposure to water / drought risk
- engaging with our suppliers especially in mentioned South America regions we encourage them to include drought risks into their strategy by e.g. introducing desalination plants for water-saving initiatives

Cost of response

Explanation of cost of response

This is included in the overall management costs of our departments Commercial and Supply Chain Management

W4.3

(W4.3) Have you identified any water-related opportunities with the potential to have a substantive financial or strategic impact on your business?

Yes, we have identified opportunities, and some/all are being realized

W4.3a

(W4.3a) Provide details of opportunities currently being realized that could have a substantive financial or strategic impact on your business.

Type of opportunity

Efficiency

Primary water-related opportunity

Improved water efficiency in operations

Company-specific description & strategy to realize opportunity

As a company that uses water, we see the growing responsibility we bear for preserving this natural resource. So we are committed to reducing our own water consumption as much as possible, and continuously improving the water quality in our sphere of influence.

This commitment is set out in our environmental policy, and in our Business Code of Conduct we stipulate that our partners must use water responsibly along the supply chain. Although we have already accomplished a lot, in our strategy we have set a target of reducing specific metal emissions to water in grams per ton of multimetal copper equivalent by a further 25 % by 2030 compared to 2018. Here compliance with legal regulations is the foundation and minimum standard of our activities.

In the past, Aurubis commissioned a facility for rainwater retention, treatment, and utilization at the Lünen site for example, so now a large part of the plant's internal cooling and process water needs are covered by the collected rainwater. Additionally, we recycle the water used in our production and cooling processes in a closed cycle where feasible. This has allowed us to continually increase the volume of rainwater used over the past few years, while water withdrawal from the public water network has decreased accordingly. In 2021, more than 120,000 m³ of process water was used for internal purposes and thus conserved. Overall, the project for rainwater use has significantly surpassed the projected quantities. In 2021, we were able to reduce wastewater discharge by more than 50 % compared to 2019 thanks to optimized water collection and provision. Further optimizations of internal water use are planned for the coming years. The goal is to use all water internally to the greatest possible extent and prevent the discharge of process water into the public sewer system. Thus, the project contributes significantly to increasing water efficiency at the site.

Another example is the water grid update project at the Pirdop site in Bulgaria. The project comprises the improvement and reconstruction of the site's water supply and sewage system, which is currently implemented. Aurubis' R&D department has investigated water types and sources considering alternative sources, which have been included in the design of the new treatment plant for industrial wastewater. Construction of the new plant will commence in 2023.

Estimated timeframe for realization

1 to 3 years

Magnitude of potential financial impact

Low-medium

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact

The reductions of water withdrawals, and water discharges, goes along with lower fees for water consumption, use, and treatment.

W5. Facility-level water accounting

W5.1

(W5.1) For each facility referenced in W4.1c, provide coordinates, water accounting data, and a comparison with the previous reporting year.

Facility reference number

Facility 1

Facility name (optional)

Aurubis AG, Hamburg site

Country/Area & River basin

Germany
Elbe River

Latitude

53,521576

Longitude

10,03331

Located in area with water stress

No

Total water withdrawals at this facility (megaliters/year)

56.852

Comparison of total withdrawals with previous reporting year

About the same

Withdrawals from fresh surface water, including rainwater, water from wetlands, rivers and lakes

56.485

Withdrawals from brackish surface water/seawater

0

Withdrawals from groundwater - renewable

0

Withdrawals from groundwater - non-renewable

0

Withdrawals from produced/entrained water

0

Withdrawals from third party sources

367

Total water discharges at this facility (megaliters/year)

55.484

Comparison of total discharges with previous reporting year

About the same

Discharges to fresh surface water

55.456

Discharges to brackish surface water/seawater

0

Discharges to groundwater

0

Discharges to third party destinations

37

Total water consumption at this facility (megaliters/year)

1.369

Comparison of total consumption with previous reporting year

Lower

Please explain

Water consumption at Hamburg site was lower than in the previous year, mainly because of the planned maintenance shutdown at the Hamburg site.

W5.1a

(W5.1a) For the facilities referenced in W5.1, what proportion of water accounting data has been third party verified?

Water withdrawals – total volumes

% verified

76-100

Verification standard used

Total volume of water withdrawal is part of our annually reviewed environmental KPIs, which are standardized for the Aurubis group and verified by external auditors from TÜV Nord Cert. The verification services provided are accredited under EMAS standard (Verification of group-wide harmonized environmental KPIs on the basis of Regulation (EC) No 1221/2009 as amended on 25 November 2009).

Water withdrawals – volume by source

% verified

76-100

Verification standard used

Volume of water withdrawal by source is part of our annually reviewed environmental KPIs, which are standardized for the Aurubis group and verified by external auditors from TÜV Nord Cert. The verification services provided are accredited under EMAS standard (Verification of group-wide harmonized environmental KPIs on the basis of Regulation (EC) No 1221/2009 as amended on 25 November 2009).

Water withdrawals – quality by standard water quality parameters

% verified

76-100

Verification standard used

Proportion with regard to the facilities referenced in W5.1 (Hamburg) is 100%. Water quality from river Elbe at Hamburg site is measured and monitored.

Water discharges – total volumes

% verified

76-100

Verification standard used

Total volume of water discharges is part of our annually reviewed environmental KPIs, which are standardized for the Aurubis group and verified by external auditors from TÜV Nord Cert. The verification services provided are accredited under EMAS standard (Verification of group-wide harmonized environmental KPIs on the basis of Regulation (EC) No 1221/2009 as amended on 25 November 2009).

Water discharges – volume by destination

% verified

76-100

Verification standard used

Volume of water discharge by destination is part of our annually reviewed environmental KPIs, which are standardized for the Aurubis group and verified by external auditors from TÜV Nord Cert. The verification services provided are accredited under EMAS standard (Verification of group-wide harmonized environmental KPIs on the basis of Regulation (EC) No 1221/2009 as amended on 25 November 2009).

Water discharges – volume by final treatment level

% verified

Not relevant

Please explain

The permitted water discharge quality is the leading parameter for our water discharges. Therefore, water discharge volumes by final treatment level is not relevant and not expected to be considered as relevant in the future.

Water discharges – quality by standard water quality parameters

% verified

76-100

Verification standard used

Water discharge quality (metal concentration and load) is regularly measured and monitored during the entire year on a regular basis for all sites with direct discharge to water bodies and for sites with indirect discharge to municipal wastewater treatment plants according to permits. Water discharge quality is part of our annually reviewed environmental KPIs, which are standardized for the Aurubis group and verified by external auditors from TÜV Nord Cert. The verification services provided, are accredited under EMAS standard (Verification of group-wide harmonized environmental KPIs on the basis of Regulation (EC) No 1221/2009 as amended on 25 November 2009).

Water consumption – total volume

% verified

76-100

Verification standard used

Total volume of water consumption is part of our annually reviewed environmental KPIs, which are standardized for the Aurubis group and verified by external auditors from TÜV Nord Cert. The verification services provided, are accredited under EMAS standard

(Verification of group-wide harmonized environmental KPIs on the basis of Regulation (EC) No 1221/2009 as amended on 25 November 2009).

W6. Governance

W6.1

(W6.1) Does your organization have a water policy?

Yes, we have a documented water policy that is publicly available

W6.1a

(W6.1a) Select the options that best describe the scope and content of your water policy.

	Scope	Content	Please explain
Row 1	Company-wide	Description of business dependency on water Description of business impact on water Reference to company water-related targets	<p>Our water policy is company-wide in scope and is part of our Environmental Policy.</p> <p>Water is used in metal production for many important processes e.g. cooling processes, processing, steam generation and cleaning processes. Sufficient amount of freshwater is relevant for securing the operation. Continuous improvement of the environmental performance in wastewater management as e.g. for water pollution control and conservation of natural resources (e.g. fresh surface water, groundwater), are key goals within the scope of our Environmental Policy. As a producer of copper and other non-ferrous metals, we are aware of our responsibility toward the environment and people who could be directly or indirectly impacted by our business activities.</p> <p>Our “Business partner Code of Conduct” applies to all business partners of the Aurubis Group, including subsidiaries that are majority-owned by Aurubis (>50 %). Aurubis expects its business partners to establish and maintain processes and procedures to minimize environmental impact and risks and to continuously improve environmental performance. This relates to (but not exclusively) resource efficiency, including water use, as well as e.g. emissions to water.</p> <p>One environmental target is the reduction of specific metal emissions to water by 50 % until 2022 (compared to 2012).</p> <p>Even though we aren’t able to fully quantify our contribution to achieving these goals yet, we highlight activities that promote the goals in our Sustainability Report.</p>

			<p>Compliance with legal regulations is the basis and minimum standard of our activities. Ongoing improvement in environmental protection is enshrined in our corporate strategy and is one of our key responsibilities.</p> <p>We communicate regularly with our key stakeholders about sustainability-related topics. We believe it is important to maintain an open and transparent dialogue with employees, customers, suppliers, politicians and society, capital market participants, the media, non-governmental organizations, and the scientific community. Our customers are appropriately informed about the features of our products and necessary safety measures and are advised on questions related to product disposal. Contractors working for us must be selected, informed, and advised in such a way as to ensure that laws and our environmental protection standards are observed.</p>
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W6.2

(W6.2) Is there board level oversight of water-related issues within your organization?

Yes

W6.2a

(W6.2a) Identify the position(s) (do not include any names) of the individual(s) on the board with responsibility for water-related issues.

Position of individual or committee	Responsibilities for water-related issues
Chief Operating Officer (COO)	Within the executive board, the COO has the responsibility to coordinate all large sites in the Aurubis Group. He is responsible for the composition of the investment budget which contains CAPEX for upcoming 4 financial years (incl. water projects). Several times a year, the COO hosts the Group Operations Meeting (GOM) with all major sites, Corporate Environmental Protection (CEP) and e.g. Sustainability among others to participate. It serves as information exchange on site-relevant topics (e.g. water related) and major projects are reviewed. In the resort of the COO the Head of CEP is responsible for strategic positioning of env. protection in the Group. Env. officers oversee the env. protection duties at the sites following national env. legislation with technical supervision of CEP. Example: Lünen site developed a project which will increase water efficiency through max. reuse of water. The project has been approved by the COO and is now at the beginning of the implementation phase.
Board-level committee	The Executive Board approves 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. €

	<p>has to be individually approved by the Executive Board with projects > 10 Mio. € to be forwarded to Supervisory Board for final approval. Investment budget and individual project approvals also cover water-related issues. The Executive Board defines the strategy for Aurubis Group and afterwards aligns the strategy with the Supervisory Board. One key pillar of Aurubis strategy is Sustainability incl. water-related projects and targets. Each quarter, an in-depth review by the Executive Board takes place on every major plant's financial and operating performance which also covers sustainability and water-related issues.</p>
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W6.2b

(W6.2b) Provide further details on the board's oversight of water-related issues.

	Frequency that water-related issues are a scheduled agenda item	Governance mechanisms into which water-related issues are integrated	Please explain
Row 1	Scheduled - some meetings	<p>Overseeing acquisitions, mergers, and divestitures</p> <p>Overseeing major capital expenditures</p> <p>Reviewing and guiding annual budgets</p> <p>Reviewing and guiding business plans</p> <p>Reviewing and guiding risk management policies</p> <p>Reviewing and guiding strategy</p>	<ul style="list-style-type: none"> • As part of the Board of Directors, the COO oversees acquisitions and divestiture with water relation. All due diligence processes are carried out in accordance with the OECD standards (Organization for Economic Co-operation and Development) and include assessments on environmental protection (thus also water-related subjects). • The COO oversees major capital expenditures in the context of water, since all major investment requests from the sites are approved by the COO. • Budgets of the sites in context of water and, in particular, the investment plans of the sites within the framework of the medium-term plan are reviewed, guided and approved by the COO. • As part of the Executive Board, the COO contributes by reviewing and guiding water related issues, also the business plan. • COO guides and reviews the Risk Management Policy in context of water as part of the Executive Board. • COO oversees all strategic growth projects in context of water and continues developing Aurubis' strategy

W6.2d

(W6.2d) Does your organization have at least one board member with competence on water-related issues?

	Board member(s) have competence on water-related issues	Criteria used to assess competence of board member(s) on water-related issues
Row 1	Yes	The Executive Board Member for Production (Chief Operations Officer) has strong competence in water-related issues due to his scientific academic background and his doctorate in chemistry. He is professional experienced as research chemist in several management positions at international companies (e.g. Vice President Operations, Technology, and Investment Intermediates) and in technical-operational work as Chief Technology Officer with technical functions and functional management of the several production sites and facilities in the chemical industry.

W6.3

(W6.3) Provide the highest management-level position(s) or committee(s) with responsibility for water-related issues (do not include the names of individuals).

Name of the position(s) and/or committee(s)

Chief Operating Officer (COO)

Water-related responsibilities of this position

Assessing water-related risks and opportunities
Managing water-related risks and opportunities

Frequency of reporting to the board on water-related issues

More frequently than quarterly

Please explain

Within the executive board, the Chief Operating Officer (COO) is responsible for all large sites in the Aurubis Group. Hence, he is responsible for the composition of the investment budget which contains all Capital Expenditure volumes for the following four financial years. This budget then also includes projects on water-related issues. Several times throughout a fiscal year the COO hosts the Group Operations Meeting (GOM) with all major sites, Corporate Environmental Protection (CEP) and e.g. Sustainability and Corporate Energy & Climate Affairs among others to participate. The meeting serves as information exchange on site-relevant topics (e.g. water related) and major projects are presented and reviewed. In the resort of the COO the Head of CEP is responsible for strategic positioning of env. protection in the Group. Environmental officers oversee the

env. protection duties at the sites following national environmental legislation with technical supervision of CEP.

W6.4

(W6.4) Do you provide incentives to C-suite employees or board members for the management of water-related issues?

	Provide incentives for management of water-related issues	Comment
Row 1	Yes	The boards CSR targets in the fiscal year 2021/22 was to improve the EcoVadis rating result of Aurubis. Responsible water management is assessed by EcoVadis and included in the company's performance. An improvement of the EcoVadis Rating was one of the ESG performance targets of the Board in 2021/22.

W6.4a

(W6.4a) What incentives are provided to C-suite employees or board members for the management of water-related issues (do not include the names of individuals)?

	Role(s) entitled to incentive	Performance indicator	Contribution of incentives to the achievement of your organization's water commitments	Please explain
Monetary reward	Board/Executive board Chief Executive Officer (CEO) Chief Financial Officer (CFO) Chief Operating Officer (COO)	Company performance against a sustainability index with water-related factors (e.g., DJSI, CDP Water Security score, etc.)	An improvement of the EcoVadis Rating was one of the ESG performance targets of the Board in 2021/2022. The boards CSR targets in the fiscal year 2021/2022 was to improve the EcoVadis rating result of Aurubis. Responsible water management is assessed by EcoVadis and included in the company's performance. An improvement of the EcoVadis rating was considered as achieved when the achieved total score increased in comparison to the rating of the previous year. An improvement in the EcoVadis rating has been chosen as a target because the criteria of the rating comprehensively reflect the sustainability pillars. Therefore, a rating improvement indicates the overall performance in the area of	

			<p>sustainability. The company's performance in water security is part of the rating in the area of environment. The improvement in the rating is part of the non-financial criteria of the individual performance of the executive board and determines the annual bonus along with financial criteria. The target constitutes 5 % of the overall non-financial target that influence the annual bonus of the executive board members. The target was achieved (Improvement of the EcoVadis overall Score of Aurubis from 72 to 73).</p>	
Non-monetary reward				

W6.5

(W6.5) Do you engage in activities that could either directly or indirectly influence public policy on water through any of the following?

- Yes, direct engagement with policy makers
- Yes, trade associations
- Yes, funding research organizations

W6.5a

(W6.5a) What processes do you have in place to ensure that all of your direct and indirect activities seeking to influence policy are consistent with your water policy/water commitments?

Within Aurubis Group, we coordinate our political activities in regular exchange in fields of Energy&Climate policy, Environmental policy, Circular Economy, Supply Chain&Trade Policy (Participants: Executive Board, Leadership of the above-mentioned sectors, leading functions involved in political issues). Relevant political developments are reported, our position for the Aurubis strategy is streamlined and our activities are coordinated. Inconsistencies will be addressed here to ensure consistency of water commitments. The Corp. Env. dep. (CEP) is analyzing the EU Env. policy developments, identifying risks and opportunities on Aurubis in general and on individual sites together with them. The topics are ranked by a consistent set of criteria. This assessment framework allows us to deliver clear priorities and objectives rel. to water policy commitments. The results are provided in Group Env. meetings with the COO and the env. managers of all sites 2 times a year. Annual individual exchange on EU env. regulatory developments (major part water policy) are carried out by CEP together with the env. managers of the sites to ensure that local env. legislation and concerns of the sites are respected and considered in our activities. Thus, an advocacy strategy is developed and updated on regular

basis incl. key messages and approach to policy makers. We are actively working as member of the trade associations or bring our position directly to decision makers at EU and national level

W6.6

(W6.6) Did your organization include information about its response to water-related risks in its most recent mainstream financial report?

Yes (you may attach the report - this is optional)

W7. Business strategy

W7.1

(W7.1) Are water-related issues integrated into any aspects of your long-term strategic business plan, and if so how?

	Are water-related issues integrated?	Long-term time horizon (years)	Please explain
Long-term business objectives	Yes, water-related issues are integrated	5-10	Continuous improvement of environmental performance, including optimization of water management, is part of our environmental policy and of the company guidelines on environmental protection (e.g. water pollution control and reduction of water use). As part of the Aurubis' strategy, Aurubis' sustainability targets are clear and measurable and review every new project on the basis of these KPIs and ensures long-term sustainable growth. Thereby, water-related issues are integrated in our long-term business objectives (sustainability targets 2030). One of the Aurubis' 2030 sustainability targets is the reduction of specific metal emissions to water in g/t of multimetal copper equivalent by 25% compared to the base year 2018.
Strategy for achieving long-term objectives	Yes, water-related issues are integrated	5-10	As reported above in W4, water-related issues are part of strategic risk assessment. We elaborate scenarios of physical climate change risks (such as storm surge risks) and we include the risks identified in this process in our long-term planning (including financial planning) so that we can adapt to changing conditions / climatic conditions. For example: the levees and dams (Polder) to protect Hamburg plant against possible flooding are high

			enough to withstand current projected storm surge levels. If these projections of storm surge levels rise due to climate change, then Capex for an increase of these levees and dams would be part of our strategic planning.
Financial planning	Yes, water-related issues are integrated	5-10	As reported above in W4, water-related issues are part of strategic risk assessment. We elaborate scenarios of physical climate change risks (such as storm surge risks) and we include the risks identified in this process in our long-term planning (including financial planning) so that we can adapt to changing conditions / climatic conditions. For example: the levees and dams (Polder) to protect Hamburg plant against possible flooding are high enough to withstand current projected storm surge levels. If these projections of storm surge levels rise due to climate change, then Capex for an increase of these levees and dams would be part of our strategic planning.

W7.2

(W7.2) What is the trend in your organization's water-related capital expenditure (CAPEX) and operating expenditure (OPEX) for the reporting year, and the anticipated trend for the next reporting year?

Row 1

Water-related CAPEX (+/- % change)

-30

Anticipated forward trend for CAPEX (+/- % change)

50

Water-related OPEX (+/- % change)

-20

Anticipated forward trend for OPEX (+/- % change)

5

Please explain

Water CAPEX/OPEX are expenditures/cost, influenced by internal and external factors (projects or global price increases), so fluctuations can occur from year to year. The reduction of ~30% CAPEX and ~20% OPEX are mainly caused by individual water-related projects e.g. to optimize water emission control and to reduce water use (e.g. within renewal of slag wet granulation at Hamburg site). Trends cannot be derived from one year, but only over long periods: We have invested ~€330 Mio. since 2012 in

environmental protection in the Group. We are continuously improving in water management through CAPEX projects at the sites, e.g., to minimize wastewater volume and load of metal emissions to water. Thus, CAPEX trend is expected to increase (~50%) and OPEX trend is expected to remain the same. Lünen site developed a big project that will increase water efficiency by max. reuse of water and adopting a water zero-wastewater strategy. Note: water-related OPEX excl. data from Beerse site.

W7.3

(W7.3) Does your organization use scenario analysis to inform its business strategy?

	Use of scenario analysis	Comment
Row 1	Yes	Currently, the strategic risk portfolio is amended by climate-related physical risks – applying a 2° C scenario and a climate stress scenario of 4° C.

W7.3a

(W7.3a) Provide details of the scenario analysis, what water-related outcomes were identified, and how they have influenced your organization's business strategy.

	Type of scenario analysis used	Parameters, assumptions, analytical choices	Description of possible water-related outcomes	Influence on business strategy
Row 1	Climate-related	Aurubis conducted a scenario analysis in 2022 following the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). The analysis utilized the Munich Re Climate Change Edition and incorporated scenario analysis using the RCP 2.6 and RCP 8.5 scenarios. As part of the analysis, Aurubis assessed its sites and the countries where its largest concentrate suppliers are located, using the Natural Hazards Assessment Network (NATHAN) risk score. The NATHAN risk score is based on data related to various climate risks, including storms,	Out of the 17 facilities operated by Aurubis, three are exposed to flood risk to varying degrees. However, only our facility in Hamburg carries a significant risk of flooding that could have a substantial impact on our business, as outlined in section 4.1a. The Hamburg site, located in Germany, is particularly vulnerable to the high risk of river flooding caused by storm surge. In a scenario with a temperature increase of 1.5 2.6°C, the Berango site in Spain faces a moderate risk of river flooding, while in a scenario with a	The analysis indicates that flooding will have a notable effect on our direct operations. We estimate that the risk of a 3 month production shutdown at our Hamburg site would result in a potential loss of approx. €90 m. Each day of complete production loss means approx €1 m. There will be additional expenses for repairs, clean-up, and remediation, which are estimated to range between €20 to €40 m (rough estimate). Our mitigation strategy incl. conducting annual updates on our physical climate risk analysis. Incl.

		<p>floods, and severe weather events. This scoring system enables a more comprehensive evaluation of the risks associated with climate-related natural disasters.</p>	<p>temperature increase of 4°C, the Stolberg site in Germany is similarly affected by a moderate risk of river flooding. Flooding at Aurubis facilities presents the potential for extended production shutdowns and severe damage to critical equipment and production facilities. Additionally, the floodwaters and accompanying mud can cause significant disruptions to the plant's infrastructure, including the stability of buildings.</p>	<p>monitoring projected flood water levels to ensure timely response measures. Our Hamburg plant is safeguarded by dams and levees (Polders), which enclose the Peute peninsula. They are constructed to withstand current projected storm surge levels. We prioritize annual flood response, emergency preparedness and evacuation trainings. We maintain an on-site firefighting department to ensure a swift emergency response. To enhance business continuity, we have specific measures such as flood-proof containers for storing oil and elevated storage areas for materials above flood level. According to the Hamburg Port Authority, our facilities are well protected until 2050 with the existing Polder and levee system. However, it is anticipated that by approximately 2035, a new Polder will need to be constructed to ensure the long-term protection of our Hamburg plant beyond 2050. At this stage, it is premature to estimate the capital expenditure required for a future project.</p>
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W7.4

(W7.4) Does your company use an internal price on water?

Row 1

Does your company use an internal price on water?

No, and we do not anticipate doing so within the next two years

Please explain

An internal price on water is not currently in place.

Relevancy to incorporate potential water prices or other valuation practices has not been assessed yet.

W7.5

(W7.5) Do you classify any of your current products and/or services as low water impact?

	Products and/or services classified as low water impact	Primary reason for not classifying any of your current products and/or services as low water impact	Please explain
Row 1	No, but we plan to address this within the next two years	Other, please specify Impact on water use in LCA of copper cathode is ongoing. Hot spot analysis in OEF and PEF studies concluded that water use is not one of the most relevant impact categories i.e. does not contribute to at least 80% of the single overall score.	For getting wide picture of the env. impacts and our sustainable development, we evaluated the env. profile of our core product Cu cathode and the env. performance of the whole organization based on -Life Cycle Assessment (LCA) ISO standards 14040, 14044 -Environmental Footprint (EF) Methods adopted by the EU Commission (Recom. on use of EF methods) -Environmental product declarations (EPD) for our Cu sheets used in architecture (ISO 15804) The LCA for our produced Cu cathode includes impact categories of carbon footprint, primary energy demand, acidification, summer smog, and eutrophication. An impact category for the consumption of freshwater is included in the ongoing update of our Cu Cathode LCA and will be available next year. OEF studies for copper production and PEF study for Cu sheet assessed impact on water use and confirmed that water use is not one of the most relevant impact categories for any of the life cycle stages

			i.e. acquisition of raw materials and manufacturing
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W8. Targets

W8.1

(W8.1) Do you have any water-related targets?

Yes

W8.1a

(W8.1a) Indicate whether you have targets relating to water pollution, water withdrawals, WASH, or other water-related categories.

	Target set in this category	Please explain
Water pollution	Yes	
Water withdrawals	No, and we do not plan to within the next two years	We consider reduction of metal emissions to water as key indicator for water-related targets for our business activities.
Water, Sanitation, and Hygiene (WASH) services	No, and we do not plan to within the next two years	We consider reduction of metal emissions to water as key indicator for water-related targets for our business activities.
Other	No, and we do not plan to within the next two years	We consider reduction of metal emissions to water as key indicator for water-related targets for our business activities.

W8.1b

(W8.1b) Provide details of your water-related targets and the progress made.

Target reference number

Target 1

Category of target

Water pollution

Target coverage

Company-wide (direct operations only)

Quantitative metric

Reduction in concentration of pollutants

Year target was set

2013

Base year

2012

Base year figure

2,2

Target year

2022

Target year figure

1,1

Reporting year figure

0,8

% of target achieved relative to base year

127,2727272727

Target status in reporting year

Achieved

Please explain

We have made significant improvements in water pollution control. We have reduced metal emissions to water in copper production processes from 2.2 to 0.8 g per ton of copper output since 2012. This is a decline of 63 % (target: 50 %).

Target reference number

Target 2

Category of target

Water pollution

Target coverage

Company-wide (direct operations only)

Quantitative metric

Reduction in concentration of pollutants

Year target was set

2023

Base year

2018

Base year figure

0,87

Target year

2030

Target year figure

0,65

Reporting year figure

0,74

% of target achieved relative to base year

59,0909090909

Target status in reporting year

New

Please explain

When determining the targets as part of our updated Sustainability Strategy, we provided for the company's transformation from a copper to a multimetal producer. In the future, our new specific reduction targets and the associated reporting of specific emissions will no longer be based on copper output, but rather on a multimetal indicator – the copper equivalent.

The calculation is based on an approach that has already been established at a European level within the framework of an EU project on the life cycle assessment (environmental footprint) of organizations and products, the Organisation Environmental Footprint and the Product Environmental Footprint. The copper equivalent describes all the metals Aurubis produces. It standardizes the entire metal production using a weighting factor based on the respective average metal prices. The observation period for the relevant metals ranged from seven to nine years. To prevent the influence of value fluctuations, the average prices used for the metals are fixed for the entire target timeframe of the Sustainability Strategy. The calculation method was verified by external auditors in 2021.

The Aurubis Environmental Report 2023 contains the first reporting on target achievement based on the new KPIs. The closing of the target timeframe of the 2018–2023 Sustainability Strategy, now integrated as interim targets in the 2030 Aurubis Group Strategy, marks the final reporting of our specific emissions based on copper production.

Our new water related target until 2030: Reducing by 25 % the specific metal emissions to water in g per tonne of copper equivalent.

In 2022, metal emissions to water per ton of copper equivalent output in multimetal production were reduced by 15 % compared to 2018 (to 0.74 g/t copper equivalent). We plan to achieve our goal of a 25 % reduction by 2030 by implementing new projects and making improvements to the existing facilities.

W9. Verification

W9.1

(W9.1) Do you verify any other water information reported in your CDP disclosure (not already covered by W5.1a)?

Yes

W9.1a

(W9.1a) Which data points within your CDP disclosure have been verified, and which standards were used?

Disclosure module	Data verified	Verification standard	Please explain
W1 Current state	Environmental KPIs on site level: - Water withdrawal by source (m ³) - Water discharge by destination (m ³) - Water consumption (m ³) - Metal emissions to water: separate for Cu, Zn, Pb, Ni, As, Cd, Hg and sum of metal load (kg/a)	Other, please specify Based on the regulation (EG) No. 1221/2009 (EMAS)	We determine key environmental protection factors (Environmental KPIs), which are uniform within the Group and are reviewed and certified by external auditors annually. Standard of verification audit based on the regulation (EG) No. 1221/2009 (EMAS).
W8 Targets	Multimetal-KPIs (MM-KPIs)	Other, please specify Based on the regulation (EG) No. 1221/2009 (EMAS)	Verification of group-wide harmonized multi-metal key figures in environmental protection. The audit included the multimetal key figures (MM-KPIs) as well as the method for determining the MM-KPIs. Standard of verification audit based on the regulation (EG) No. 1221/2009 (EMAS).

W10. Plastics

W10.1

(W10.1) Have you mapped where in your value chain plastics are used and/or produced?

	Plastics mapping	Value chain stage	Please explain
Row 1	Yes	Direct operations	<p>A key business area for Aurubis is the recycling of copper scrap and complex recycling raw materials, such as computer circuit boards. Our integrated smelter network enables us to process a broad range of materials – from industrial waste that accumulates directly from our production or our customers’ production to complex materials from end-of-life products.</p> <p>Complex recycling raw materials include industrial residues, slimes, and shredder materials, as well as recycling materials and waste that contains copper, precious metals, and lead. We also consider end-of-life materials from electronic devices, vehicles, and other everyday items to be complex recycling raw materials. These consist of increasingly complex composite materials that include plastics, ceramic, and glass. Separating these into single-variety material and product streams for reuse is a significant challenge for the entire recycling sector. For this purpose, we utilize highly developed metallurgical separating and refining processes in different combinations.</p>

W10.2

(W10.2) Across your value chain, have you assessed the potential environmental and human health impacts of your use and/or production of plastics?

	Impact assessment	Value chain stage	Please explain
Row 1	Yes	Direct operations	<p>In our production processes, the energy content of plastic is being used in the general case. For the CO2 emissions we submit ETS certificates. Pollutants that may be contained in the plastics, or generated from plastics during the processes are captured and treated according to the individual site's environmental permit; we therefore consider potential environmental and human health impacts to be effectively prevented.</p>

W10.3

(W10.3) Across your value chain, are you exposed to plastics-related risks with the potential to have a substantive financial or strategic impact on your business? If so, provide details.

	Risk exposure	Please explain
Row 1	No, risks assessed, and none considered as substantive	Plastics is not an substantial part of our business model.

W10.4

(W10.4) Do you have plastics-related targets, and if so what type?

	Targets in place	Please explain
Row 1	No – and we do not plan to within the next two years	Plastics is not an substantial part of our business model.

W10.5

(W10.5) Indicate whether your organization engages in the following activities.

	Activity applies	Comment
Production of plastic polymers	No	
Production of durable plastic components	No	
Production / commercialization of durable plastic goods (including mixed materials)	No	
Production / commercialization of plastic packaging	No	
Production of goods packaged in plastics	No	
Provision / commercialization of services or goods that use plastic packaging (e.g., retail and food services)	No	

W11. Sign off

W-FI

(W-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.

W11.1

(W11.1) Provide details for the person that has signed off (approved) your CDP water response.

	Job title	Corresponding job category
Row 1	Chief Executive Officer (CEO)	Chief Executive Officer (CEO)

SW. Supply chain module

SW0.1

(SW0.1) What is your organization’s annual revenue for the reporting period?

	Annual revenue
Row 1	18.521.000

SW1.1

(SW1.1) Could any of your facilities reported in W5.1 have an impact on a requesting CDP supply chain member?

Yes, CDP supply chain members buy goods or services from facilities listed in W5.1

SW1.1a

(SW1.1a) Indicate which of the facilities referenced in W5.1 could impact a requesting CDP supply chain member.

Facility reference number

Facility 1

Facility name

Hamburg Site (Aurubis AG)

Requesting member

Prysmian SpA

Description of potential impact on member

Aurubis site Hamburg is located in the Hamburg port area which is vulnerable to the influence of tides of the North Sea via the river Elbe and thus also vulnerable to storm surges caused by major storms in the North Sea area. 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. In the exceptional scenario that there are longer production shutdowns or breakdown of major production facilities, product deliveries (e.g. rod) could be taken over from other (e.g. rod producing) sites of Aurubis in order to maintain product supply to our customers. Aurubis also supplies the Prysmian Group from other Aurubis sites, so there is no sole dependency on the Hamburg site.

Comment

SW1.2

(SW1.2) Are you able to provide geolocation data for your facilities?

	Are you able to provide geolocation data for your facilities?	Comment
Row 1	Yes, for some facilities	

SW1.2a

(SW1.2a) Please provide all available geolocation data for your facilities.

Identifier	Latitude	Longitude	Comment
Hamburg, Germany	53,521576	10,03331	
Pirdop, Bulgaria	42,703374	24,177048	
Lünen, Germany	51,60646	7,50755	
Olen, Belgium	51,1687	4,9039	
Stolberg, Germany	50,759048	6,234986	
Buffalo, USA	42,948404	-78,892807	
Pori, Finland	61,462226	21,861253	
Avellino, Italy	40,914388	14,790612	
E.R.N., Hamburg, Germany	53,526343	10,029339	
Retorte, Hamburg, Germany	49,49038	11,24973	
Peute Baustoffe, Hamburg, Germany	53,51133	10,05728	
Deutsche Giessdraht, Emmerich, Germany	51,82784	6,26501	
Aurubis Beerse, Belgium	51,31962	4,81783	
Aurubis Berango, Spain	43,36787	2,993	

SW2.1

(SW2.1) Please propose any mutually beneficial water-related projects you could collaborate on with specific CDP supply chain members.

SW2.2

(SW2.2) Have any water projects been implemented due to CDP supply chain member engagement?

No

SW3.1

(SW3.1) Provide any available water intensity values for your organization’s products or services.

Product name

Copper production

Water intensity value

0,9

Numerator: Water aspect

Other, please specify
Metal emissions to water

Denominator

Ton of copper output

Comment

The reduction of metal emissions to water in Aurubis group copper production is part of our environmental targets and within the scope of our sustainability strategy: Reducing specific metal emissions to water by 50 % in g/t of copper output until 2022 compared to 2012. A 63 % total reduction was achieved in 2022. Thus, we have achieved our target regarding metal emissions to water, which are now on a very low level and will be further reduced in future. KPI is verified externally every year. Our specific metal emission to water per ton copper production was 0.8 g/t Cu output in 2022.

Product name

Copper production

Water intensity value

40

Numerator: Water aspect

Water withdrawn

Denominator

Ton of copper output

Comment

Conserving water resources is one of our environmental goals to minimize the environmental impact of our business activities, described also in our environmental policy. Compared to the reference year 2012, water withdrawal per ton of copper was reduced by 32 % in 2022. Thus, our water withdrawal has been significantly reduced during the last years, it is thus on a very low level, and it is intended to be further reduced also in the future. Due to various influencing factors (e.g. extreme weather conditions), slight upward or downward fluctuations occur and may also occur in the future. KPI is verified externally every year. Our specific water withdrawal per ton copper production was 40 m³ / t Cu output in 2022.

Submit your response

In which language are you submitting your response?

English

Please confirm how your response should be handled by CDP

	I understand that my response will be shared with all requesting stakeholders	Response permission
Please select your submission options	Yes	Public

Please indicate your consent for CDP to share contact details with the Pacific Institute to support content for its Water Action Hub website.

Yes, CDP may share our Main User contact details with the Pacific Institute

Please confirm below

I have read and accept the applicable Terms