

# Welcome to your CDP Water Security Questionnaire 2022

## W0. Introduction

### W0.1

#### **(W0.1) Give a general description of and introduction to your organization.**

At BASF, we create chemistry for a sustainable future. About 111,000 employees in the BASF Group work on contributing to the success of our customers in nearly all sectors and almost every country in the world.

BASF's activities are grouped into six segments: Chemicals, Materials, Industrial Solutions, Surface Technologies, Nutrition & Care and Agricultural Solutions. In 2021, BASF posted sales of €78.6 billion and income from operations before special items of approx. €7.8 billion. BASF shares are traded on the stock exchange in Frankfurt (BAS) and as American Depositary Receipts (BASFY) in the U.S. Further information on BASF is available at [www.basf.com](http://www.basf.com).

We carry out our corporate purpose, "We create chemistry for a sustainable future", by pursuing ambitious goals along our entire value chain. In this way, we aim to achieve profitable growth and take on social and environmental responsibility. Our products, solutions and technologies contribute to achieving the United Nations' Sustainable Development Goals (SDGs), for example, on sustainable consumption and production, climate action or fighting hunger. We are committed to contributing to the Paris climate agreement and support the recommendations of the Task Force for Climate-related Financial Disclosure (TCFD). We have defined sustainability focus areas in our corporate strategy to position ourselves in the market while meeting the growing challenges along the value chain: We source responsibly; We produce safely for people and environment; We produce efficiently; We value people and treat them with respect; We drive sustainable products and solutions.

Our leading position as an integrated global chemical company gives us the chance to make important contributions in the areas of resources, environment and climate, food and nutrition, and quality of life. Dealing with climate change is one of the major challenges to ensure a sustainable future. That's why we are committed to energy efficiency and global climate protection along the value chain.

Since 1990, we have been able to lower our overall greenhouse gas (GHG) emissions from chemical operations by 49.7% and reduce specific emissions by 75.4%. In March 2021, we set new ambitious climate goals: We raised our medium-term 2030 target from CO2-neutral growth to reducing our global GHG emissions by 25 percent compared with 2018 – despite targeted

growth and construction of a large Verbund site in South China. Further, we want to achieve net zero emissions by 2050. To achieve our ambitious climate protection goals, we have adopted comprehensive carbon management. This has five levers to reduce greenhouse gas emissions: Using renewable energies for both electricity and steam production (gray-to-green and power-to-steam levers), developing and applying new carbon-free and low-carbon production processes (new technologies lever), using alternative raw materials (bio-based feedstocks lever), and ongoing measures to further increase energy and resource efficiency in our production (continuous opex lever).

We also offer solutions that help our customers to avoid GHG emissions. They are classified as Accelerators “Climate Change and Energy” in our portfolio steering approach “Sustainable Solution Steering” and reflect our wide portfolio of climate protection products. For example, our expandable polystyrene granulates Styropor® and Neopor® are used to insulate buildings and help to save heating energy and reduce CO<sub>2</sub>. We invest more than 60% of our annual Research and Development (R&D) expenditures (€2.216 billion total R&D expenses in 2021) on product and process innovations where the R&D target is related to energy/resource efficiency and climate protection.

We use an in-house digital solution to calculate the carbon footprint of our products (PCF). These PCFs include all product-related greenhouse gas emissions generated until a BASF product leaves the factory gates (“cradle-to-gate”). The methodology follows general standards for life cycle analysis such as ISO 14044 and ISO 14067, as well as the Greenhouse Gas Protocol Product Standard, and has been certified by TÜV Rheinland. We used the method to calculate PCFs for around 45,000 sales products in 2021. The transparency this creates enables us to target our CO<sub>2</sub> reduction measures to those areas where our customers can later achieve the greatest value added from lower carbon emissions in the value chain.

Forward-Looking Statements: This document may contain forward-looking statements. These statements are based on current estimates and projections and currently available information. Future statements are not guaranteeing future developments and results outlined therein. These are dependent on several factors; they involve various risks and uncertainties; and they are based on assumptions that may not prove to be accurate. We do not assume any obligation to update the forward-looking statements contained in this report.

## W-CH0.1a

**(W-CH0.1a) Which activities in the chemical sector does your organization engage in?**

- Bulk organic chemicals
- Bulk inorganic chemicals
- Specialty organic chemicals
- Specialty inorganic chemicals

## 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 | January 1, 2021 | December 31, 2021 |
|----------------|-----------------|-------------------|

## W0.3

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

Argentina  
Australia  
Bahrain  
Belgium  
Brazil  
Canada  
Chile  
China  
Denmark  
Finland  
France  
Germany  
India  
Indonesia  
Ireland  
Italy  
Japan  
Malaysia  
Mexico  
Netherlands  
New Zealand  
Norway  
Poland  
Republic of Korea  
Russian Federation  
Singapore  
Slovakia  
South Africa  
Spain  
Switzerland  
Taiwan, China  
Thailand  
Turkey  
United Kingdom of Great Britain and Northern Ireland  
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.**

Other, please specify

Worldwide production sites of BASF SE, its fully consolidated subsidiaries (emissions included in full), and proportionally consolidated joint operations (emissions disclosed pro rata according to BASF's interest)

## 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  |
|---|---|
| Administrative sites (e.g. sales offices)   | BASF only reports water inputs/outputs for its production sites. The water inputs/outputs from its various administrative sites are not collected since their contribution to BASF's total water inputs/outputs is not significant (<0.1%). Also, wastewater from these sites typically consists of sanitary wastewater and does not represent industrial wastewater. |
| Associated/affiliated companies over which BASF has significant influence but does not have financial control (so-called B-companies) or from subsidiaries that are considered to be immaterial from a BASF point of view (so-called C-companies) | The contribution of the water inputs/outputs from BASF's B- and C- companies to BASF's total water inputs/outputs is not significant (<2%). Thus, they are not collected and reported.  |

## 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   | DE000BASF111                   |

## 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                        | Important                      | <p><b>DIRECT OPERATIONS</b></p> <p>Primary use: Coolant (87%), also as solvent or cleaning agent, and product input.<br/>                     Rationale: Many of our products rely on freshwater as product or process input, with strict quality parameters. With impure water, product quality is severely affected/efforts for water pre-treatment rise. 2021, 77% of water withdrawal was from surface water/freshwater sources. Hence, freshwater availability is considered vital for operations.<br/>                     Future trends: At this time, we expect no significant changes in importance, as core processes and product lines will remain. Future shifts in product portfolio could alter this status.</p> <p><b>INDIRECT OPERATIONS</b></p> <p>Primary use: Many suppliers are chemical factories and use water as coolant and solvent.<br/>                     Rationale: The water use heavily depends on sector/product. For instance, hydrocarbons require lots of process steam and cooling water. Other products are less dependent on freshwater. BASF has thousands of products that are used to produce tens of thousands of products in the value chain. Each of these products' water use is specific for each production step and varies widely.<br/>                     Determining the distribution of water more in detail is therefore not possible. In general, availability is important, but not in all cases vital for operations in our supply chain.<br/>                     Future trends: At this time, we expect no significant changes of dependency in our supply chain, as core groups of procured materials will remain.</p> |

|  |       |           |   |
|--|-------|-----------|---|
|  |       |           | Future shifts in the product portfolio could alter this status.   |
| Sufficient amounts of recycled, brackish and/or produced water available for use | Vital | Important | <p><b>DIRECT OPERATIONS</b></p> <p>Primary use: Recycled, brackish, and/or produced water is mainly used for cooling purposes.<br/> Rationale: 15% of withdrawal was from brackish/seawater in 2021: a significant share that cannot be readily replaced by other sources. We recirculate water as much as possible, to withdraw less.<br/> Future trends: At this time, we expect no significant changes, as use of brackish water depends on availability/local conditions. Use of recycled water may be increased to decrease freshwater dependency.</p> <p><b>INDIRECT OPERATIONS</b></p> <p>Primary use: Mainly coolant (brackish) and solvent (recycled).<br/> Rationale: The use and importance of brackish/recycled water depend on the process, availability, and local conditions. Therefore, this aspect is important, but not in all cases vital for operations.<br/> Future trends: Currently, we expect no significant changes in water dependency in our supply chain, as core groups of procured materials will remain in place. However, future shifts in the product portfolio could alter this status. The use of recycled water or reuse of wastewater may be increased due to limited freshwater supply.</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 | Please explain  |
|-----------------------------------|----------------------------------|---|
| Water withdrawals – total volumes | 100%                             | <p><b>METHOD OF MEASUREMENT</b></p> <p>BASF collects data on water supply, water use, and water discharge at site level in a global</p> |

|  |             |  |
|--|-------------|--|
|  |             | <p>database, called REHSA. Data entry and maintenance have globally standardized reporting requirements. Withdrawn water volumes are either determined continuously or updated on a regular basis with various methods depending on the withdrawal method and specific applicability, e.g., pump characteristics, dynamic pressure measurements, ultrasound or magneto-inductive measurements and transferred to REHSA. The measuring equipment is monitored and regularly maintained. We publicly report the information for the entire company in our annual report and the database is audited externally. 100% of BASF production sites are monitored for total volumes of water withdrawals. `Site` refers to all worldwide production sites of BASF SE, its fully consolidated subsidiaries, and proportionally consolidated joint operations.</p> <p>FREQUENCY</p> <p>Data in the REHSA database is updated annually.</p>                 |
| <p>Water withdrawals – volumes by source</p> | <p>100%</p> | <p>METHOD OF MEASUREMENT</p> <p>Each withdrawal source is an individual measurement point. Withdrawal volumes are either determined continuously or updated on a regular basis with various methods, e.g., pump characteristics, dynamic pressure measurements, ultrasound, or magneto-inductive measurements and transferred to our global database REHSA. Measuring equipment is monitored and regularly maintained. BASF aggregates source data on water supply, water use, and water discharge at site level in REHSA. Data entry and maintenance have globally standardized reporting requirements. We publicly report the information for the entire company in our annual report and the database is audited externally. 100% of BASF production sites are monitored for volumes of water withdrawals by sources. `Site` refers to all worldwide production sites of BASF SE, its fully consolidated subsidiaries, and proportionally</p> |

|                                  |      |  |
|----------------------------------|------|--|
|                                  |      | <p>consolidated joint operations.</p> <p>FREQUENCY</p> <p>Data in the REHSA database is updated annually.</p>  |
| Water withdrawals quality        | 100% | <p>METHOD OF MEASUREMENT</p> <p>BASF collects data on water supply, water use, and water discharge at the site level in a global database, called REHSA (Reporting EHS Application). Data entry and maintenance have globally standardized reporting requirements. We publicly report the information for the entire company in our annual report and the database is audited externally. 100% of BASF production sites are monitored for water withdrawal quality by the amount of total dissolved solids (TDS). Depending on the use of withdrawn water, further measurements are carried out according to site-specific processes. We collect the results for TDS measurement, more/equal than 1000 mg/L TDS or less than 1000 mg/L TDS in a global database. `Site` refers to all worldwide production sites of BASF SE, its fully consolidated subsidiaries, and proportionally consolidated joint operations. The measuring equipment is monitored and regularly maintained.</p> <p>FREQUENCY</p> <p>Data in the REHSA database is updated annually.</p> |
| Water discharges – total volumes | 100% | <p>METHOD OF MEASUREMENT</p> <p>BASF collects data on water supply, water use, and water discharge at the site level in a global database, called REHSA. Data entry and maintenance have globally standardized reporting requirements. Discharge volumes are either determined continuously or updated on a regular basis with various methods depending on specific applicability, e.g., mass balance, pump characteristics, dynamic pressure measurements, ultrasound, or magneto-</p>   |



|   |             |  |
|---|-------------|--|
|   |             | <p>inductive measurements, and transferred to REHSA. The measuring equipment is monitored and regularly maintained. We publicly report the information for the entire company in the annual BASF report and the database is audited externally. 100% of BASF production sites are monitored for total volumes of water discharges. `Site` refers to all worldwide production sites of BASF SE, its fully consolidated subsidiaries, and proportionally consolidated joint operations.</p> <p>FREQUENCY</p> <p>Data in the REHSA database is updated annually.</p>  |
| <p>Water discharges – volumes by destination</p>      | <p>100%</p> | <p>METHOD OF MEASUREMENT</p> <p>BASF collects data on water supply, water use, and water discharge at site level in a global database, called REHSA. Data entry and maintenance have globally standardized reporting requirements. For each discharge point, the discharge volumes are either determined continuously or updated on a regular basis with various methods depending on specific applicability, e.g., mass balance, pump characteristics, dynamic pressure measurements, ultrasound or magneto-inductive measurements and transferred to REHSA. The measuring equipment is monitored and regularly maintained. We publicly report the information in our annual report. The database is audited externally. 100% of BASF production sites are monitored for volumes of water discharges by destination. `Site` refers to all worldwide production sites of BASF SE, its fully consolidated subsidiaries, and proportionally consolidated joint operations.</p> <p>FREQUENCY</p> <p>Data in the REHSA database is updated annually.</p> |
| <p>Water discharges – volumes by treatment method</p> | <p>100%</p> | <p>METHOD OF MEASUREMENT</p> <p>BASF collects data on water supply, water use,</p>   |

|  |             |  |
|--|-------------|--|
|  |             | <p>and water discharge at site level in a global database, called REHSA. Data entry and maintenance have globally standardized reporting requirements. For each discharge point, the discharge volumes are either determined continuously or updated on a regular basis with various methods depending specific applicability, e.g., mass balance, pump characteristics, dynamic pressure measurements, ultrasound, or magneto-inductive measurements. The measuring equipment is monitored and regularly maintained. We publicly report the information for the entire company in our annual report and the database is audited externally. 100% of BASF production sites are monitored for volumes of water discharges by treatment method. `Site` refers to all worldwide production sites of BASF SE, its fully consolidated subsidiaries, and proportionally consolidated joint operations.</p> <p>FREQUENCY</p> <p>Data in the REHSA database is updated annually.</p> |
| <p>Water discharge quality – by standard effluent parameters</p> | <p>100%</p> | <p>METHOD OF MEASUREMENT</p> <p>BASF collects data on water supply, water use, and water discharge at site level in a global database, called REHSA (Reporting EHS Application). Data entry and maintenance have globally standardized reporting requirements. Training sessions are conducted to ensure that the same data standards are implemented around the world. We publicly report the information for the entire company in the annual BASF report and the database is audited externally. 100% of BASF production sites are monitored for quality by standard effluent parameters, e.g., chemical oxygen demand, total oxygen demand, Nitrogen, Phosphorus, and heavy metals. Results are transferred to our global database REHSA. The measuring equipment is monitored and regularly maintained. For our company `site` refers to all</p>  |

|                                       |      |  |
|---------------------------------------|------|--|
|                                       |      | <p>worldwide production sites of BASF SE, its fully consolidated subsidiaries, and proportionally consolidated joint operations.</p> <p>FREQUENCY</p> <p>Data in the REHSA database is updated annually.</p>   |
| Water discharge quality – temperature | 100% | <p>METHOD OF MEASUREMENT</p> <p>BASF collects discharge temperature data on a local site level. It is not part of the REHSA (Reporting EHS Application) but is carried out according to site-specific processes and requirements. In general, the effluent temperature of wastewater and cooling water is monitored online with temperature sensors and the results are recorded in local databases. Time intervals vary depending on requirements and can also be continuous. In some cases, we also monitor/calculate not only temperature amounts but also heat input to e.g. surface water bodies. Therefore, we assume coverage of 100% of relevant sites (i.e., all sites with discharges of cooling water), or a slightly smaller coverage if all sites are taken into account. For our company `site` refers to all worldwide production sites of BASF SE, its fully consolidated subsidiaries and proportionally consolidated joint operations.</p> <p>FREQUENCY</p> <p>Data in the REHSA database is updated annually.</p> |
| Water consumption – total volume      | 100% | <p>METHOD OF MEASUREMENT</p> <p>BASF collects data on water consumption according to globally standardized requirements at each site in a global database called REHSA. Water consumption is determined by the sum of water evaporated in cooling processes, water in sold products, and otherwise water consumed. Evaporation is measured and calculated by every site using either the delta between the volume of make-up and blow-down water or by applying an evaporation rate (plant-specific or</p>   |

|   |      |   |
|---|------|---|
|   |      | <p>average) to the volume of used cooling water. At group level water in products is calculated from the average water content of volume sales, taken from internal databases. Otherwise consumed water is measured and reported by every site. 100% of production sites are monitored for total volumes of water consumption. `Site` refers to all worldwide production sites of BASF SE, its fully consolidated subsidiaries, and proportionally consolidated joint operations.</p> <p>FREQUENCY</p> <p>Data in the REHSA database is updated annually.</p>   |
| Water recycled/reused   | 100% | <p>METHOD OF MEASUREMENT</p> <p>BASF collects data on water consumption at each site in a global database called REHSA (Reporting EHS Application). Data entry and maintenance have globally standardized reporting requirements. Water recycled/reused is derived by measuring the volume of e.g. recirculated cooling water, collected condensate, and water reused in the production process, using e.g. pump rates of the cooling water or flow-meters. Training sessions are conducted to ensure that the same data standards are implemented around the world. 100% of BASF production sites are monitored for total volumes of water consumption. For our company `site` refers to all worldwide production sites of BASF SE, its fully consolidated subsidiaries, and proportionally consolidated joint operations.</p> <p>FREQUENCY</p> <p>Data in the REHSA database is updated annually.</p> |
| The provision of fully-functioning, safely managed WASH services to all workers | 100% | <p>METHOD OF MEASUREMENT</p> <p>BASF is committed to provide access to water, sanitation, and hygiene at the workplace at an appropriate level of standard for all employees. The Department Corporate Health Management</p>  |

|  |  |  |
|--|--|--|
|  |  | <p>is responsible for the management of general and occupational health topics of our employees, and the coordination and auditing of occupational medicine in 100% of BASF production sites worldwide. `Site` refers to all worldwide production sites of BASF SE, its fully consolidated subsidiaries, and proportionally consolidated joint operations. Part of this responsibility is the topic of sanitation and hygiene in the workplace.</p> <p>FREQUENCY</p> <p>Sites are audited on a regular basis - 5-year intervals - if no negative findings were identified, or more frequently in case of findings. Audit results and action items are tracked in an audit database. In 2021, 13 sites were audited on occupational medicine and health protection (2020: 1). Online audits were conducted for 10 of these sites.</p> |
|--|--|--|

## W1.2b

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

|                   | Volume (megaliters/year) | Comparison with previous reporting year | Please explain  |
|-------------------|--------------------------|---|---|
| Total withdrawals | 1,695,000                | About the same                          | <p>CHANGES</p> <p>The total amount of water withdrawn was about the same, with a decrease of about 2%, compared to last year (2020: 1,728,000 megaliters). A lower abstraction of surface water was compensated by a somewhat higher withdrawal of brackish water at our Verbund site in Antwerp due to variation in production and higher withdrawal of groundwater by newly acquired sites. We define changes below 15% as “about the same”, changes between 15% and 30% as “higher”/“lower” and changes of more than 30% as “much higher”/“much lower”.</p> <p>FUTURE TRENDS</p> |

|                   |           |                |  |
|-------------------|-----------|----------------|--|
|                   |           |                | <p>At this time, we expect no significant changes in total water withdrawal, as core groups of procured materials will remain in place. However, further extension of our facilities or a future change in product portfolio could alter this status.</p>  |
| Total discharges  | 1,503,000 | About the same | <p><b>CHANGES</b></p> <p>The total amount of water discharged was about the same as last year (2020: 1,429,000 megaliters). At our Verbund site in Antwerp more brackish water from once-through cooling was discharged, leading to a slightly (5%) higher discharge. We define changes below 15% as “about the same”, changes between 15% and 30% as “higher”/“lower” and changes of more than 30% as “much higher”/“much lower”.</p> <p><b>FUTURE TRENDS</b></p> <p>At this time, we expect no significant changes in total water withdrawal, as core groups of procured materials will remain in place. However, further extension of our facilities or a future change in product portfolio could alter this status.</p>   |
| Total consumption | 72,000    | About the same | <p>Water consumption is the sum of all water that has been withdrawn and incorporated into products, waste, evaporated, consumed by humans or livestock, polluted to a point of being unusable by others, and therefore not released back to surface water, groundwater, third party over the course of the reporting period. At BASF water consumption is mainly due to evaporation in recirculating cooling processes. A smaller fraction is incorporated into products or consumed by other processes.</p> <p><b>CHANGES</b></p> <p>Water consumption in 2021 was about the same as last year (2020: 63,000 megaliters). The slight increase was due to a higher proportion of water evaporated in production processes. We define changes below 15% as “about the same”,</p> |

|  |  |  |   |
|--|--|--|---|
|  |  |  | <p>changes between 15% and 30% as “higher”/“lower” and changes of more than 30% as “much higher”/“much lower”. Water evaporated in cooling processes and water consumed in production processes is aggregated from local measurements whereas water in products on the group level is calculated from the average water content of the volume sales. The figures do not add up using the basic calculation “Withdrawals = Consumption + discharges” due to measurement uncertainties for discharged cooling water in open channels. Cooling water accounts for 88% of the total discharge. Even small uncertainties can therefore result in high discrepancies, which is why calculating the consumption is not very sensible.</p> <p><b>FUTURE TRENDS</b></p> <p>At this time, we expect no significant changes in total water consumption, as core groups of procured materials will remain in place. However, higher production / further extension of our facilities or a future change in product portfolio could alter this status.</p> |
|--|--|--|---|

## W1.2d

**(W1.2d) Indicate whether water is withdrawn from areas with water stress and provide the proportion.**

|       | Withdrawals are from areas with water stress | % withdrawn from areas with water stress | Comparison with previous reporting year | Identification tool | Please explain  |
|-------|--|--|---|---------------------|---|
| Row 1 | Yes  | 1-10                                     | About the same                          | WRI Aqueduct        | In 2021, around 25% of our production sites were located in water stress areas. We define water stress areas as regions in which 40% or more of available water is used by industry, households, and agriculture, as defined by Aqueduct 3.0 (dataset stems from WRI 2019). Among other, important sites are Port |

|  |  |  |  |   |
|--|--|--|--|---|
|  |  |  |  | <p>Arthur, USA, and Shanghai, China. All sites in water stress areas accounted for 1% of BASF's total water abstraction. Water consumption in water stress areas accounted for around 16% of our total water consumption (2020: 11%) and was primarily attributable to evaporation in cooling processes. All our sites have to report their water withdrawal or supply (see question W1.2). Based on the results, we can filter water data to show only withdrawals/supplies for the sites in water stress areas. The evaluation of sites located in water stress areas is updated at the end of each calendar year. The evaluation is conducted centrally for all sites by water experts in our corporate Environmental Protection unit.</p> <p><b>CHANGES</b></p> <p>In 2021 water withdrawal by the sites in water stress areas was about the same as in 2020 (1% in 2020) of BASFs total withdrawal. We define changes below 15% as "about the same", changes between 15% and 30% as "higher"/"lower" and changes of more than 30% as "much higher"/"much lower".</p> |
|--|--|--|--|---|

## W1.2h

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

|  | Relevance | Volume (megaliters/year) | Comparison with previous reporting year | Please explain |
|--|-----------|--------------------------|---|----------------|
|  |           |                          |   |                |



|   |                 |                  |                       |   |
|---|-----------------|------------------|-----------------------|---|
| <p>Fresh surface water, including rainwater, water from wetlands, rivers, and lakes</p> | <p>Relevant</p> | <p>1,308,000</p> | <p>About the same</p> | <p>All our sites are either measuring the abstracted volume of water or the supplied volume of water. The most important type of used freshwater is river water for once-through cooling at our site in Ludwigshafen.</p> <p><b>CHANGES</b></p> <p>The volume of abstracted fresh surface water is about the same as in 2020. A slight decrease was mainly due to decreased once-through and increased recirculating cooling at our Ludwigshafen site (last year: 1,417,000 megaliters). In the last years, the site optimized the cooling water needs by technical improvements at the plant level and introduced a new re-cooling plant. We define changes below 15% as “about the same”.</p> <p><b>FUTURE TRENDS</b></p> <p>Since the proportion of once-through cooling and recirculating cooling flow is dependent on the weather situations and influenced by the water-energy nexus, volumes of abstracted surface water may vary from year to year. Also, water withdrawal in our operations is affected by production output due to cooling water use.</p> |
| <p>Brackish surface water/Seawater</p>  | <p>Relevant</p> | <p>259,000</p>   | <p>Higher</p>         | <p>Abstracted brackish water is measured, and brackish water has a relevant share within</p>  |

|                         |          |         |             |   |
|-------------------------|----------|---------|-------------|---|
|                         |          |         |             | <p>BASF's overall water withdrawals. Most of the brackish water is withdrawn and discharged at our site in Antwerp, located near the sea. The brackish water is taken from the harbor and discharged back after use in a recirculating cooling system.</p> <p><b>CHANGES</b></p> <p>The increase of 41,000 megaliters in brackish water withdrawal was mainly caused by increased once-through and decreased recirculation of cooling water at our Antwerpen site due to technical issues with one re-cooling tower (last year: 218,000 megaliters). We define changes below 15% as "about the same", changes between 15% and 30% as "higher"/"lower" and changes of more than 30% as "much higher"/"much lower".</p> <p><b>FUTURE TRENDS</b></p> <p>Since water withdrawal in our operations is affected by production output due to cooling water use, it may increase to a certain extent with growing production.</p> |
| Groundwater – renewable | Relevant | 100,000 | Much higher | <p>Abstracted groundwater is measured. The groundwater water has a rather small, but relevant share within BASF's overall water withdrawals, especially for higher quality water requirements.</p> <p><b>CHANGES</b></p>  |

|                             |              |       |                |   |
|-----------------------------|--------------|-------|----------------|---|
|                             |              |       |                | <p>With 100,000 megaliters the amount is much higher than last year, which was at 62,000 megaliters, mainly due to the acquisition of new production sites in Chalampé, France. There, groundwater had to be abstracted to maintain a hydraulic barrier and is then used on site. We define changes below 15% as “about the same”, changes between 15% and 30% as “higher”/“lower” and changes of more than 30% as “much higher”/“much lower”.</p> <p><b>FUTURE TRENDS</b></p> <p>At this time, we expect no significant changes in groundwater water withdrawal in our operations, as core groups of procured materials will remain in place. However, future shifts in the product portfolio could alter this status.</p> |
| Groundwater – non-renewable | Not relevant |       |                | <p>Non-renewable groundwater occurs in arid regions. According to Aqueduct 3.0 arid regions are e.g., Northern Africa, Arabian Peninsula, Australia, etc. BASF does not abstract non-renewable groundwater. E.g., BASF site Whyalla, which is located in an arid region in Australia, uses mainly seawater for production.</p>  |
| Produced/Entrained water    | Relevant     | 5,000 | About the same | <p>On the group level, we calculated the volume of produced/entrained water (5,000 megaliters) from the water content of our raw</p>  |

|                            |                 |               |                       |   |
|----------------------------|-----------------|---------------|-----------------------|---|
|                            |                 |               |                       | <p>materials and imported steam in 2021. This is less than 0.3% of the total water supply of BASF globally and can therefore be neglected. Since volumes are included in withdrawal volumes we report in our integrated report, we added the volumes here.</p> <p><b>CHANGES</b></p> <p>The amount is virtually constant compared to the 2020 figure. We define changes below 15% as “about the same”, changes between 15% and 30% as “higher”/“lower” and changes of more than 30% as “much higher”/“much lower”.</p> <p><b>FUTURE TRENDS</b></p> <p>Currently, we expect no significant changes in withdrawal from Produced/Entrained water. Since water withdrawal in our operations is affected by production output due to cooling water use, it may increase to a certain extent with growing production.</p> |
| <p>Third party sources</p> | <p>Relevant</p> | <p>23,000</p> | <p>About the same</p> | <p>A relevant third-party source is drinking water from municipal suppliers (20,000 megaliters). Wastewater from other organizations accounts for about 3,000 megaliters. Supplied volumes are measured.</p> <p><b>CHANGES</b></p> <p>The amount is virtually</p>   |

|  |  |  |  |   |
|--|--|--|--|---|
|  |  |  |  | <p>constant compared to the 2020 figure (26,000 megaliters). The slight decrease is due to the divestiture of sites from our Colors+Effects subsidiary that used drinking water also for production purposes. The change in withdrawals of this type was mainly caused by the sold location in Peekskill. We define changes below 15% as “about the same”, changes between 15% and 30% as “higher”/“lower” and changes of more than 30% as “much higher”/“much lower”.</p> <p><b>FUTURE TRENDS</b></p> <p>Currently, we expect no significant changes in withdrawal from third-party sources regarding drinking water. The amount of wastewater from other organizations is expected to increase.</p> |
|--|--|--|--|---|

## W1.2i

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

|                     | Relevance | Volume (megaliters/year) | Comparison with previous reporting year | Please explain  |
|---------------------|-----------|--------------------------|---|---|
| Fresh surface water | Relevant  | 1,239,000                | About the same                          | <p><b>RATIONALE FOR RELEVANCE</b></p> <p>Fresh surface water is the most important source of water supply. Most of the water is used for once-through cooling at our site in Ludwigshafen. The water is taken from the river and is given back to it after use without having contact with chemicals. The volume of</p> |

|                                 |          |         |        |  |
|---------------------------------|----------|---------|--------|--|
|                                 |          |         |        | <p>discharged water is measured. By volume, fresh surface water is the most important destination of discharge.</p> <p><b>CHANGES</b></p> <p>The slight increase in discharge was mainly due to measurement uncertainties of cooling water discharge in open channels at our Ludwigshafen site (2020: 1,205,000 megaliters). We define changes below 15% as “about the same”, changes between 15% and 30% as “higher”/”lower” and changes of more than 30% as “much higher”/”much lower”.</p> <p><b>FUTURE TRENDS</b></p> <p>Since water discharge in our operations is affected by production output due to cooling water use, it may increase to a certain extent with growing production.</p> |
| Brackish surface water/seawater | Relevant | 245,000 | Higher | <p><b>RATIONALE FOR RELEVANCE</b></p> <p>Some sites are located near the coast and brackish water or the sea is the destination for discharge. The volume of discharged water is measured. By volume, brackish water and seawater are the second most important destinations of discharge.</p> <p><b>CHANGES</b></p> <p>The higher discharge into brackish water is the result of higher cooling water discharge at the site in Antwerp, due to more once-through cooling and less</p>   |

|             |          |       |                |   |
|-------------|----------|-------|----------------|---|
|             |          |       |                | <p>recirculation of cooling water (2020: 203,000 megaliters). We define changes below 15% as “about the same”, changes between 15% and 30% as “higher”/”lower” and changes of more than 30% as “much higher”/”much lower”.</p> <p><b>FUTURE TRENDS</b></p> <p>Since water discharge in our operations is affected by production output due to cooling water use, it may increase to a certain extent with growing production.</p>   |
| Groundwater | Relevant | 1,000 | About the same | <p><b>RATIONALE FOR RELEVANCE</b></p> <p>Water discharge via soil to water beneath the soil surface or water discharge into isolated geological formations. This represents a rather small share of our overall discharges, but the relevance is constituted by the potential ecological implications. The volume of discharged water is measured.</p> <p><b>CHANGES</b></p> <p>The level is about the same as the previous year (2020: 1,000 megaliters). We define changes below 15% as “about the same”, changes between 15% and 30% as “higher”/”lower” and changes of more than 30% as “much higher”/”much lower”.</p> <p><b>FUTURE TRENDS</b></p> <p>At this time, we expect no significant changes in discharges to groundwater.</p> |

|                          |          |        |                |   |
|--------------------------|----------|--------|----------------|---|
| Third-party destinations | Relevant | 18,000 | About the same | <p><b>RATIONALE FOR RELEVANCE</b></p> <p>This includes mainly water treated in wastewater treatment plants (WWTP) that are not operated by BASF - municipal and privately owned WWTP and a small fraction (&lt;1%) of water send to others for further use. Third-party destinations represent a rather small share of our overall discharges, but the relevance is constituted by the dependence on and interrelations with external stakeholders. The volume of water discharged to third parties is measured.</p> <p><b>CHANGES</b></p> <p>The amount is within the same range as the 2020 figures (20,000 megaliters). A slight decrease is due to the divestiture of sites from our Colors+Effects subsidiary that used drinking water also for production purposes. The change of 10% in withdrawals of this type was mainly caused by the sold location in Peekskill. We define changes below 15% as “about the same”.</p> <p><b>FUTURE TRENDS</b></p> <p>At this time, we expect no significant changes in discharges to third-party sources.</p> |
|--------------------------|----------|--------|----------------|---|

## W1.2j

**(W1.2j) Within your direct operations, indicate the highest level(s) to which you treat your discharge.**

|  | Relevance of treatment | Volume (megaliters/year) | Comparison of treated volume | % of your sites/facilities/operation | Please explain |
|--|------------------------|--------------------------|------------------------------|--------------------------------------|----------------|
|--|------------------------|--------------------------|------------------------------|--------------------------------------|----------------|



|                    | level to discharge |         | with previous reporting year | ns this volume applies to |  |
|--------------------|--------------------|---------|------------------------------|---------------------------|--|
| Tertiary treatment | Relevant           | 108,000 | About the same               | 1-10                      | <p>The majority (68%) of production wastewater of BASF sites has been treated at the tertiary level in our own wastewater treatment plants.</p> <p><b>RATIONALE FOR LEVEL OF TREATMENT</b></p> <p>The sites have established a biological wastewater treatment with additional steps for the removal of nutrients (nitrification and P-elimination). For our company `site` refers to all worldwide production sites of BASF SE, its fully consolidated subsidiaries, and proportionally consolidated joint operations. BASF complies with all relevant regulatory standards and</p> |

|  |  |  |  |  |  |
|--|--|--|--|--|--|
|  |  |  |  |  | <p>emission limit values, set by the competent authorities based on local law (e.g. Industrial Emission Directive in the EU).</p> <p><b>CHANGES</b></p> <p>Compared to 2020 the volume in 2021 is about the same. A slight decrease is due to divestitures of the Colors+Effects subsidiaries which had a tertiary wastewater treatment e.g. at the site in Ulsan, Korea, or in Ludwigshafen. We define changes below 15% as “about the same”, changes between 15% and 30% as “higher”/“lower” and changes of more than 30% as “much higher”/“much lower”.</p> <p><b>FUTURE TRENDS</b></p> |
|--|--|--|--|--|--|

|                     |          |        |             |       |   |
|---------------------|----------|--------|-------------|-------|---|
|                     |          |        |             |       | Currently, we expect no significant changes in the volumes of tertiary treated wastewater. The volumes and the percentage of facilities vary with production or due to acquisitions or divestitures.  |
| Secondary treatment | Relevant | 21,000 | Much higher | 11-20 | <p>RATIONALE FOR LEVEL OF TREATMENT</p> <p>Most BASF-operated wastewater treatment plants (WWTPs) treat wastewater biologically to remove organic substances (e.g., in sanitary waters and production wastewater). We monitor the effluent levels for chemical oxygen demand (COD)/total oxygen demand (TOC), nutrients, heavy metals, and harmful substances. BASF complies with all relevant regulatory standards and</p> |

|  |  |  |  |  |  |
|--|--|--|--|--|--|
|  |  |  |  |  | <p>emission limit values, set by the competent authorities based on local law (e.g. Industrial Emission Directive in the EU).</p> <p><b>CHANGES</b></p> <p>Compared to 2020 the volume of secondary treated wastewater is much higher due to increased production and erroneous reporting of one site last year (2020: 8,000 megaliters). We define changes below 15% as “about the same”, changes between 15% and 30% as “higher”/“lower” and changes of more than 30% as “much higher”/“much lower”.</p> <p><b>FUTURE TRENDS</b></p> <p>Currently, we expect no significant changes in the</p> |
|--|--|--|--|--|--|

|                        |          |        |             |      |  |
|------------------------|----------|--------|-------------|------|--|
|                        |          |        |             |      | volumes of secondary treated wastewater. The volumes and the percentage of facilities vary with production or due to acquisitions or divestitures.   |
| Primary treatment only | Relevant | 30,000 | Much higher | 1-10 | <p>RATIONALE FOR LEVEL OF TREATMENT</p> <p>Primary wastewater treatment is physical/chemical treatment and is done e.g., at our kaolin mining and processing site in Georgia, US. Kaolin is a naturally occurring mineral. Primary treatment typically involves sedimentation or filtration to remove solids from wastewater. Also, a newly acquired site in Europe incinerates polluted wastewater and discharges other wastewaters after primary treatment. BASF</p> |

|  |  |  |  |  |  |
|--|--|--|--|--|--|
|  |  |  |  |  | <p>complies with all relevant regulatory standards and emission limit values, set by the competent authorities based on local law (e.g., Industrial Emission Directive in the EU).</p> <p><b>CHANGES</b></p> <p>Compared to 2020 (16,000 megaliters) the volume of primary treated wastewater is much higher due to the newly acquired site. We define changes below 15% as “about the same”, changes between 15% and 30% as “higher”/“lower” and changes of more than 30% as “much higher”/“much lower”.</p> <p><b>FUTURE TRENDS</b></p> <p>Currently, we expect no significant</p> |
|--|--|--|--|--|--|

|  |          |           |                |       |  |
|--|----------|-----------|----------------|-------|--|
|  |          |           |                |       | changes in the volumes of primary treated wastewater. The volumes and the percentage of facilities vary with production or due to acquisitions or divestitures.  |
| Discharge to the natural environment without treatment | Relevant | 1,326,000 | About the same | 31-40 | <p>RATIONALE FOR LEVEL OF TREATMENT</p> <p>Most of BASF's water supply is used for cooling purposes. In once-through cooling systems, the water has no contact with products and no treatment is necessary before it is discharged back to its source. About one-third of BASFs production sites are operating once-through cooling systems. The highest volumes are discharged at our Verbund sites in Ludwigshafen and Antwerp. BASF complies with all relevant regulatory standards and</p> |

|  |  |  |  |  |   |
|--|--|--|--|--|---|
|  |  |  |  |  | <p>emission limit values, set by the competent authorities based on local law.</p> <p><b>CHANGES</b></p> <p>The amount is within the same range as in 2020. A slight increase in discharge compared to last year was mainly due to a higher volume of brackish cooling water discharge from once-through cooling at our site in Antwerp (last year: 1,269,000 megaliters). We define changes below 15% as “about the same”, changes between 15% and 30% as “higher”/“lower” and changes of more than 30% as “much higher”/“much lower”.</p> <p><b>FUTURE TRENDS</b></p> <p>Since water discharge in our operations is</p> |
|--|--|--|--|--|---|



|  |          |        |                |       |  |
|--|----------|--------|----------------|-------|--|
|  |          |        |                |       | affected by production output, it may increase to a certain extent with growing production.  |
| Discharge to a third party without treatment | Relevant | 18,000 | About the same | 71-80 | <p>RATIONALE FOR LEVEL OF TREATMENT</p> <p>About 3/4 of BASF sites discharge wastewater to a third-party treatment plant. Before discharging, this wastewater is pre-treated at the production sites depending on local regulations.</p> <p>CHANGES</p> <p>The volume is within the same range as last year. The slightly lower volume compared to the 2020 figures (20,000 megaliters), is due to divestitures of Colors+Effects subsidiary in Peekskill, US. We define changes below 15% as “about</p> |

|       |              |  |  |  |  |
|-------|--------------|--|--|--|--|
|       |              |  |  |  | <p>the same”, changes between 15% and 30% as “higher”/“lower” and changes of more than 30% as “much higher”/“much lower”.</p> <p>FUTURE TRENDS</p> <p>At this time, we expect no significant changes in discharges to third-party sources.</p> |
| Other | Not relevant |  |  |  | No other treatment methods reported.   |

### 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 | 78,600,000,000 | 1,695,000                                  | 46,371.6814159292                 | Most of the water withdrawn is used for cooling purposes (87%) and returned (i.e. not consumed). Water withdrawal efficiency implies that higher efficiency is better, although the cooling would have to be replaced by alternative methods. These are, e.g. higher recirculation rates in closed loop systems, which require more energy for pumps and hence increase the carbon footprint of production facilities. BASF balances the |

|  |  |  |  |  |
|--|--|--|--|--|
|  |  |  |  | withdrawal of cooling water taking energy consumption and other factors. |
|--|--|--|--|--|

## W-CH1.3

**(W-CH1.3) Do you calculate water intensity for your activities in the chemical sector?**

Yes

### W-CH1.3a

**(W-CH1.3a) For your top five products by production weight/volume, provide the following water intensity information associated with your activities in the chemical sector.**

---

**Product type**

Bulk organic chemicals

**Product name**

Ethylene

**Water intensity value (m3)**

0.34

**Numerator: water aspect**

Freshwater consumption

**Denominator**

Ton

**Comparison with previous reporting year**

About the same

**Please explain**

WHY VOLUMES CHANGE/ANTICIPATED FUTURE TRENDS:

Compared to the previous year the intensity is about the same (2021: 0.39). We define changes below 15% as "about the same", changes between 15 % and 30% as "higher"/"lower" and changes of more than 30% as "much higher"/"much lower". We define water consumption as water not returned to its original environment (includes evaporated water, water contained in products, and consumed as part of chemical reactions). Water intensities at BASF plants are vastly different depending on location (even for the same product). Our largest sites in Ludwigshafen and Antwerp were chosen as examples for 5 major products. Hot summers can lead to less fresh water available and higher river water temperatures. In such periods, recirculated water volume is increased, which results in higher consumption + water intensities. Shutdowns + testing of equipment can also lead to higher water consumption. Hence, volumes change continuously and cannot be anticipated.

## USE OF METRICS /STRATEGY TO MANAGE INTENSITIES

The more water is recirculated (and partially evaporated/consumed), the more electricity for pumping is needed, representing a cost factor, and causing GHG emissions. The recirculated water portion of the cooling water cycle is continuously monitored to maintain an optimum of emissions, water consumption, and once-through cooling mode. The main parameters determining the optimum are regulatory constraints (max. effluent temp., receiving water body temp., max. freshwater intake), electricity prices, and pumping capacity. We seek to limit re-cooling + save energy, thus also reducing calculated water intensities. At the site level, the recirculation rate/water intensity is a central parameter to planning future demand for cooling capacities and is part of the long-term development strategy of the sites. Our central environmental goal is to reduce CO<sub>2</sub> emissions (BASF GHG target). Since 87% of the water withdrawn is used for cooling purposes, a reduction of re-cooling with reduced power demand for pumps reduces water intensities (lower evaporation from cooling towers) and CO<sub>2</sub> emissions. These optimization criteria are integrated into daily operations and part of the strategy of reaching BASF's global climate target.

---

### Product type

Bulk organic chemicals

### Product name

Propylene

### Water intensity value (m3)

0.34

### Numerator: water aspect

Freshwater consumption

### Denominator

Ton

### Comparison with previous reporting year

About the same

### Please explain

WHY VOLUMES CHANGE/ANTICIPATED FUTURE TRENDS:

Compared to the previous year the intensity is about the same (2021: 0.39). We define changes below 15% as "about the same", changes between 15 % and 30% as "higher"/"lower" and changes of more than 30% as "much higher"/"much lower". We define water consumption as water not returned to its original environment (includes evaporated water, water contained in products, and consumed as part of chemical reactions). Water intensities at BASF plants are vastly different depending on location (even for the same product). Our largest sites in Ludwigshafen and Antwerp were

chosen as examples for 5 major products. Hot summers can lead to less fresh water available and higher river water temperatures. In such periods, recirculated water volume is increased, which results in higher consumption + water intensities. Shutdowns + testing of equipment can also lead to higher water consumption. Hence, volumes change continuously and cannot be anticipated.

#### USE OF METRICS /STRATEGY TO MANAGE INTENSITIES

The more water is recirculated (and partially evaporated/consumed), the more electricity for pumping is needed, representing a cost factor, and causing GHG emissions. The recirculated water portion of the cooling water cycle is continuously monitored to maintain an optimum of emissions, water consumption, and once-through cooling mode. The main parameters determining the optimum are regulatory constraints (max. effluent temp., receiving water body temp., max. freshwater intake), electricity prices, and pumping capacity. We seek to limit re-cooling + save energy, thus also reducing calculated water intensities. At the site level, the recirculation rate/water intensity is a central parameter to planning future demand for cooling capacities and is part of the long-term development strategy of the sites. Our central environmental goal is to reduce CO<sub>2</sub> emissions (BASF GHG target). Since 87% of the water withdrawn is used for cooling purposes, a reduction of re-cooling with reduced power demand for pumps reduces water intensities (lower evaporation from cooling towers) and CO<sub>2</sub> emissions. These optimization criteria are integrated into daily operations and part of the strategy of reaching BASF's global climate target.

#### **Product type**

Bulk organic chemicals

#### **Product name**

Benzene

#### **Water intensity value (m3)**

0.07

#### **Numerator: water aspect**

Freshwater consumption

#### **Denominator**

Ton

#### **Comparison with previous reporting year**

Lower

#### **Please explain**

WHY VOLUMES CHANGE/ANTICIPATED FUTURE TRENDS:

Compared to previous year the intensity is lower (2021: 0.09). We define changes below 15% as "about the same", changes between 15 % and 30% as "higher"/"lower" and

changes of more than 30% as “much higher”/“much lower”. We define water consumption as water not returned to its original environment (includes evaporated water, water contained in products, and consumed as part of chemical reactions). Water intensities at BASF plants are vastly different depending on location (even for the same product). Our largest sites in Ludwigshafen and Antwerp were chosen as examples for 5 major products. Hot summers can lead to less fresh water available and higher river water temperatures. In such periods, recirculated water volume is increased, which results in higher consumption + water intensities. Shutdowns + testing of equipment can also lead to higher water consumption. Hence, volumes change continuously and cannot be anticipated.

#### USE OF METRICS /STRATEGY TO MANAGE INTENSITIES

The more water is recirculated (and partially evaporated/consumed), the more electricity for pumping is needed, representing a cost factor, and causing GHG emissions. The recirculated water portion of the cooling water cycle is continuously monitored to maintain an optimum of emissions, water consumption, and once-through cooling mode. The main parameters determining the optimum are regulatory constraints (max. effluent temp., receiving water body temp., max. freshwater intake), electricity prices, and pumping capacity. We seek to limit re-cooling + save energy, thus also reducing calculated water intensities. At the site level, the recirculation rate/water intensity is a central parameter to planning future demand for cooling capacities and is part of the long-term development strategy of the sites. Our central environmental goal is to reduce CO<sub>2</sub> emissions (BASF GHG target). Since 87% of the water withdrawn is used for cooling purposes, a reduction of re-cooling with reduced power demand for pumps reduces water intensities (lower evaporation from cooling towers) and CO<sub>2</sub> emissions. These optimization criteria are integrated into daily operations and part of the strategy of reaching BASF's global climate target.

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#### **Product type**

Bulk organic chemicals

#### **Product name**

Ammonia

#### **Water intensity value (m3)**

1.67

#### **Numerator: water aspect**

Freshwater consumption

#### **Denominator**

Ton

#### **Comparison with previous reporting year**

Higher

### Please explain

#### WHY VOLUMES CHANGE/ANTICIPATED FUTURE TRENDS:

Compared to the previous year the intensity is higher (2021: 1.38). We define changes below 15% as “about the same”, changes between 15 % and 30% as “higher”/“lower” and changes of more than 30% as “much higher”/“much lower”. We define water consumption as water not returned to its original environment (includes evaporated water, water contained in products, and consumed as part of chemical reactions). Water intensities at BASF plants are vastly different depending on location (even for the same product). Our largest sites in Ludwigshafen and Antwerp were chosen as examples for 5 major products. Hot summers can lead to less fresh water available and higher river water temperatures. In such periods, recirculated water volume is increased, which results in higher consumption + water intensities. Shutdowns + testing of equipment can also lead to higher water consumption. Hence, volumes change continuously and cannot be anticipated.

#### USE OF METRICS /STRATEGY TO MANAGE INTENSITIES

The more water is recirculated (and partially evaporated/consumed), the more electricity for pumping is needed, representing a cost factor, and causing GHG emissions. The recirculated water portion of the cooling water cycle is continuously monitored to maintain an optimum of emissions, water consumption, and once-through cooling mode. The main parameters determining the optimum are regulatory constraints (max. effluent temp., receiving water body temp., max. freshwater intake), electricity prices, and pumping capacity. We seek to limit re-cooling + save energy, thus also reducing calculated water intensities. At the site level, the recirculation rate/water intensity is a central parameter to planning future demand for cooling capacities and is part of the long-term development strategy of the sites. Our central environmental goal is to reduce CO<sub>2</sub> emissions (BASF GHG target). Since 87% of the water withdrawn is used for cooling purposes, a reduction of re-cooling with reduced power demand for pumps reduces water intensities (lower evaporation from cooling towers) and CO<sub>2</sub> emissions. These optimization criteria are integrated into daily operations and part of the strategy of reaching BASF's global climate target.

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#### Product type

Bulk organic chemicals

#### Product name

Butadiene

#### Water intensity value (m3)

2.35

#### Numerator: water aspect

Freshwater consumption

#### Denominator

Ton

### Comparison with previous reporting year

About the same

### Please explain

WHY VOLUMES CHANGE/ANTICIPATED FUTURE TRENDS:

Compared to the previous year the intensity is about the same (2021: 2.55). We define changes below 15% as “about the same”, changes between 15 % and 30% as “higher”/“lower” and changes of more than 30% as “much higher”/“much lower”. We define water consumption as water not returned to its original environment (includes evaporated water, water contained in products, and consumed as part of chemical reactions). Water intensities at BASF plants are vastly different depending on location (even for the same product). Our largest sites in Ludwigshafen and Antwerp were chosen as examples for 5 major products. Hot summers can lead to less fresh water available and higher river water temperatures. In such periods, recirculated water volume is increased, which results in higher consumption + water intensities. Shutdowns + testing of equipment can also lead to higher water consumption. Hence, volumes change continuously and cannot be anticipated.

USE OF METRICS /STRATEGY TO MANAGE INTENSITIES

The more water is recirculated (and partially evaporated/consumed), the more electricity for pumping is needed, representing a cost factor, and causing GHG emissions. The recirculated water portion of the cooling water cycle is continuously monitored to maintain an optimum of emissions, water consumption, and once-through cooling mode. The main parameters determining the optimum are regulatory constraints (max. effluent temp., receiving water body temp., max. freshwater intake), electricity prices, and pumping capacity. We seek to limit re-cooling + save energy, thus also reducing calculated water intensities. At the site level, the recirculation rate/water intensity is a central parameter to planning future demand for cooling capacities and is part of the long-term development strategy of the sites. Our central environmental goal is to reduce CO<sub>2</sub> emissions (BASF GHG target). Since 87% of the water withdrawn is used for cooling purposes, a reduction of re-cooling with reduced power demand for pumps reduces water intensities (lower evaporation from cooling towers) and CO<sub>2</sub> emissions. These optimization criteria are integrated into daily operations and part of the strategy of reaching BASF's global climate target.

## W1.4

### (W1.4) Do you engage with your value chain on water-related issues?

Yes, our suppliers

Yes, our customers or other value chain partners



## W1.4a

**(W1.4a) What proportion of suppliers do you request to report on their water use, risks and/or management information and what proportion of your procurement spend does this represent?**

### Row 1

#### **% of suppliers by number**

1-25

#### **% of total procurement spend**

51-75

#### **Rationale for this coverage**

SELECTION

We work with over 70,000 Tier 1 suppliers worldwide. They supply us with important raw materials, chemicals, investment goods, and consumables, and perform a range of services. Due to the large number of suppliers, they are evaluated based on risk. We take into account the materiality of the supply relationship and country and industry-specific risks. We also use observations from our employees in procurement and information from internal and external databases, such as the Together for Sustainability (TfS) initiative. Our third-party evaluations are therefore focused on the most relevant suppliers, which are those Tier 1 suppliers showing an elevated sustainability risk potential as identified by our risk matrices, our purchasers' assessments or other sources like TfS.

INCENTIVATION

Suppliers are evaluated by independent experts either in on-site audits or online assessments. The latter is conducted by EcoVadis, a rating agency specialized in sustainability analyses that provides us with valuable information on our suppliers' sustainability performance, including water use, management procedures, wastewater handling, and the existence of a water policy, as well as relevant international certifications. In 2021, 48% of assessed suppliers were certified by ISO 14001 (environmental management system), and 27% reported on measures taken to reduce water consumption. Our buyers integrate the results of the evaluations into their supplier management. The sustainability results can be used in bonus malus schemes and as awarding criterion. Suppliers may be excluded from participating in tenders because of poor sustainability evaluation results.

#### **Impact of the engagement and measures of success**

INFORMATION REQUESTED

In the EcoVadis online assessments, suppliers are requested to report on water use, management procedures, wastewater handling and existence of a water policy. In on-site audits, water policies, reports, protection concepts for wastewater effluents,

containment measures and water-related impact reduction practices are examined.

#### USE OF INFORMATION

Suppliers' performance in these areas impacts their evaluation results. If we identify deviations from standards, we ask suppliers to develop and implement corrective measures within a reasonable time frame. We support them in their efforts, for example with training on environmental topics. We review our suppliers' progress according to a defined timeframe based on the sustainability risk identified, or after five years at the latest.

#### MEASURE OF SUCCESS

We analyze the relevant spend we cover with evaluations (status 2021: 85%). Relevant spend comprises the procurement spend of all suppliers deemed relevant, as described under "Rationale for this coverage". In addition, we track the percentage of evaluated suppliers that improve their sustainability performance upon re-evaluation, according to their re-assessment or follow-up TfS audit (status 2021: 74%). We have set ourselves the goal to increase this percentage to 80% by 2025.

#### Comment

Spend calculated according to International Financial Reporting Standards (IFRS).

## W1.4b

**(W1.4b) Provide details of any other water-related supplier engagement activity.**

---

#### Type of engagement

Incentivizing for improved water management and stewardship

#### Details of engagement

Demonstrable progress against water-related targets is incentivized in your supplier relationship management

#### % of suppliers by number

1-25

#### % of total procurement spend

51-75

#### Rationale for the coverage of your engagement

Our supplier base currently comprises more than 70,000 tier 1 suppliers which provide us with raw materials, chemicals, investment goods and consumables, and perform a range of services. Out of the total amount of suppliers in our portfolio in 2021, 10% had a valid sustainability evaluation. This represents coverage of 55% of the spend, out of the total spend we had with our suppliers in 2021. Due to the high number of suppliers

we work with, focusing our third-party evaluations on the most relevant is crucial. We define relevant suppliers as Tier 1 suppliers showing an elevated sustainability risk potential as identified by our risk matrices (including both country and industry-specific risks), our purchasers' assessments or other sources, such as evaluations from the Together for Sustainability initiative (TfS). With TfS, suppliers are evaluated by independent experts either in on-site audits or online assessments. The latter are conducted by EcoVadis, a rating agency specialized in sustainability analyses that provides us with valuable information on our suppliers' sustainability performance, including water use, management procedures, wastewater handling, and the existence of a water policy, as well as relevant international certifications. In 2021, 48% of assessed suppliers were certified by ISO 14001 (environmental management system), and 27% reported on measures taken to reduce water consumption. When analyzing alternative suppliers, buyers can access evaluation reports on the suppliers' sustainability performance. Employees with procurement responsibility receive ongoing training in sustainability-oriented supplier management and responsible procurement. In addition, buyers are encouraged and trained to integrate available evaluation results into awarding processes and business decisions.

### **Impact of the engagement and measures of success**

#### INCENTIVATION

The EcoVadis assessments and TfS audits are used as a tool for supplier risk management and continuous improvement. They provide a direct supplier performance indicator that can be positively influenced, e.g., by proving implementation of water management measures and policies, safe handling of wastewater, and/or setting water-related targets.

#### BENEFICIAL OUTCOMES

In 2021, 48% of assessed suppliers were certified by ISO 14001 (environmental management system), and 27% reported on measures taken to reduce water consumption. BASF engages in numerous initiatives to foster sustainable development. As an example, in 2021 BASF co-funded the Responsible Lithium Partnership, which aims, amongst others, to work towards responsible natural resource management in the Salar de Atacama watershed in Chile e.g., from the impacts of lithium extraction. The region's ecosystem is fragile and there is a lack of consensus regarding the impacts of lithium mining in the region. Potential risks derived from water and brine table shifts could potentially harm the ecosystems and affect local livelihoods. Addressing such water-related risks effectively requires the collaboration of stakeholders, including suppliers. The project initiated a multi-stakeholder platform, starting a dialogue that did not exist before among all relevant actors in the Salar watershed, and continues to facilitate multiple exchanges to jointly develop an action plan to improve long-term integrated natural resource management and verify and improve available technical data.

Concerning castor oil, BASF is still contributing to the Sustainable Castor Initiative – Pragati to improve the economic situation of castor oil farmers in India and raise awareness of sustainable farming methods. As part of the project, more than 5,800

smallholder farmers have already received training on topics like efficient water use.

#### MEASURE OF SUCCESS

We analyze the relevant spend we cover with evaluations (status 2021: 85%) and track the percentage of evaluated suppliers that improve their sustainability performance upon re-evaluation (status 2021: 74%). Threshold of success: By 2025, we aim to have conducted sustainability evaluations for 90% of the BASF Group's relevant spend (=procurement spend with relevant suppliers) and will develop action plans where improvement is necessary. In addition, we aim to have 80% of suppliers improve their sustainability performance upon re-evaluation by 2025.

#### Comment

Spend calculated according to International Financial Reporting Standards (IFRS).

## W1.4c

### (W1.4c) What is your organization's rationale and strategy for prioritizing engagements with customers or other partners in its value chain?

We integrate sustainability information in day-to-day business with **customers**.

#### METHOD/STRATEGY

We use a range of sustainability tools to interact with customers: LCA tools (Eco-Efficiency Analysis, SEEBALANCE®, AgBalance™) or tools for systematic sustainability analysis in a value chain. Intensity and modus of interaction (e.g. one-to-one meetings, workshops, joint projects) is customer-dependent.

#### RATIONALE/PRIORITIZATION

We engage with customers in close partnerships to align our business optimally with customers' needs and contribute to their success with our solutions. Our engagement essentially covers our entire customer base. Findings from our sustainability tools allow us to identify hot spots; prioritization for working with specific customers is primarily driven by our divisions based on opportunities. We segmented our portfolio regarding contribution to sustainability (incl. reduction of water use), using the Sustainable Solution Steering® method. Products with substantial sustainability contributions in the value chain are classified as Accelerators.

We **measure success** by their sales volume (2021 sales of €24.1 billion, +50% from 2020).

We also undertake **sector-specific engagements**: E.g., via our Agricultural Products division, we engage with selected agricultural customers, networks, initiatives and also **local water utilities**.

#### METHOD/STRATEGY

Partnerships to jointly develop and spread best management practices to reduce water use and pollution. This can apply to optimized product use of e.g. herbicides, technical innovations like mulch films, optimized irrigation practices or alternative cultivation techniques like dry-seed rice.

RATIONALE/PRIORITIZATION

Partners must be influencers in strategic value chains (crop-specific) and willing to cooperate with the industry.

We **measure success** by the number of touchpoints with value chain players (e.g. number of engaged farmers or advisors), as well as Agricultural Products product sales within these value chains.

## 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?**

Yes, fines, enforcement orders or other penalties but none that are considered as significant

### W2.2a

**(W2.2a) Provide the total number and financial value of all water-related fines.**

Row 1

**Total number of fines**

1

**Total value of fines**

4,200

**% of total facilities/operations associated**

0.4

**Number of fines compared to previous reporting year**

About the same

**Comment**

NATURE OF BREACH

Exceedances occurred for sanitary wastewater and cooling tower blowdown (several

minor incidents).

#### RESOLUTION

Sanitary wastewater has been rerouted to POTW (publicly owned treatment works) and for cooling tower blowdown stricter controls (more frequent checks) were implemented to address the issue. Stricter controls include reviewing lab results of in-process testing prior to initiating blowdown from the system and an automated interlock to prohibit discharge if the online analyzer detects high levels of residual chlorine. Additionally, a review process has been put in place to assure that all regulatory samples are taken and a sample is not missed.

#### RESOLUTION

The significance can be considered minor.

## W3. Procedures

### W-CH3.1

**(W-CH3.1) How does your organization identify and classify potential water pollutants associated with its activities in the chemical sector that could have a detrimental impact on water ecosystems or human health?**

#### POLICIES AND PROCESSES IN PLACE

We are committed to continuously minimizing the negative effects of our products on the environment, health, and safety (EHS) and to the ongoing optimization of our products. This commitment to product safety is enshrined in our Responsible Care® charter and the initiatives of the International Council of Chemical Associations (ICCA). Our global requirements define rules, processes, and responsibilities, e.g., to ensure uniformly high product safety standards worldwide. We maintain, evaluate, and continuously update EHS data for all our substances and products in a global database. The database forms the basis for substance and product assessments and for our safety data sheets, which we make available to our customers in around 40 languages. These include information on the physical/chemical and (eco-)toxicological properties of products, risk management measures, and disposal. Our global emergency hotline network enables us to provide information around the clock. We use the Globally Harmonized System (GHS) to classify and label our products around the world and we consider any legal implementation such as EUs CLP Regulation. Most of our substances are subject to statutory chemicals regulations like REACH in the EU.

Corporate EHS is responsible for defining BASF-wide requirements and standards for handling and monitoring pollutants. Corporate EHS is connected via cross-divisional and cross-regional teams around the world to exchange on ongoing legislative activities.

#### DETAILS OF ESTABLISHED STANDARDS

There is no common legal standard for wastewater pollutants on a global level. Authorities set standards based on national or supranational regulation, e.g., European IED, considering pollutant properties (toxicity, persistence, bioaccumulation) and the current situation of the receiving water body to avoid detrimental impacts on water ecosystems or human health. BASF assesses the impacts of wastewater discharge in accordance with applicable laws and regulations. We identified pollutants in wastewater of global relevance. These are heavy metals (due to toxicity for humans and other organisms), and substances causing eutrophication (organic carbon, nitrogen, phosphorus), leading to reduced oxygen availability in water bodies and therefore decimating water organisms and damaging ecosystems. We collect data of these pollutants in our REHSA Database globally.

#### HOW PROCESSES VARY ACROSS VALUE CHAIN

We train our employees, customers, and logistics partners worldwide on the proper handling and optimal use of selected products with particular hazard potential. Furthermore, in associations and together with other manufacturers, BASF is pushing for the establishment of voluntary global commitments to prevent the misuse of chemicals.

BASF's Global Requirement "Environmental Protection" requires that all production facilities conduct a Water Risk Assessment (WRA), including cooling and process wastewater, firefighting water, and management of spillages or leakages. Implemented protective measures consider volume and properties of handled substances and conditions of receiving water body. The site/plant manager is responsible for conducting a WRA. The WRA is intended to identify water risks in a globally consistent manner. This enables BASF to exchange experiences and share learnings, thus, to continuously improving the environmental safety of its production sites. BASF's global audit team checks the WRA documentation of sites regularly.

BASF is a founding member of "Together for Sustainability" (TfS), an initiative of the leading chemical companies. TfS evaluates the environmental performance of suppliers with audits, also considering wastewater prevention and treatment.

Additionally, the specific potential impacts of our products are assessed in relation to the context, e.g., in the case of herbicides in agricultural applications. This typically applies to products that are distributed to end consumers.

The largest portion of BASF's product portfolio consists of industrial products which are distributed for further processing in virtually all industries. Here, the focus of potential impacts on the water is on the safety of transport of these products to our customers. We want our products to be loaded, transported, and handled safely. Therefore, we depend on global standards, an effective organization, and reliable logistics partners. Our goal is to minimize risks along the entire transportation chain. The transportation of dangerous goods is subject to mandatory national and international dangerous goods regulations as well as our global guidelines. We use our global requirement to specifically assess the safety and environmental risks of transporting and handling raw materials and sales products with high hazard potential. This is based on the Guidance on Safety Risk Assessment for Chemical Transport Operations published by the European Chemical Industry Council (CEFIC).

## W-CH3.1a

**(W-CH3.1a) Describe how your organization minimizes adverse impacts of potential water pollutants on water ecosystems or human health. Report up to ten potential pollutants associated with your activities in the chemical sector.**

| Potential water pollutant | Value chain stage | Description of water pollutant and potential impacts   | Management procedures  | Please explain  |
|---------------------------|-------------------|--|--|---|
| Nitrogen                  | Direct operations | <p>Nitrogen is a common chemical element found in many molecules used in the chemical industry, e.g. ammonia, a building block of many chemical products (e.g. plastics, fertilizer). As such, traces of Nitrogen are typically contained in chemical industry wastewater. Nitrogen levels in wastewater can be reduced biologically (De-Nitrification) to meet regulatory standards. Total emissions of Nitrogen into the aquatic environment amounted to 3000 t in 2021 or about 90 g of total Nitrogen per ton of sales product from the chemicals business. High nitrogen concentrations in aquatic ecosystems raise the level of nutrients, can cause algal blooms, and lead to oxygen depletion. This eutrophication process may pose a threat to biodiversity and diminish life in aquatic environments. Loss of biodiversity can cause spiralling negative</p> | <p>Compliance with effluent quality standards</p> <p>Measures to prevent spillage, leaching, and leakages</p> <p>Other, please specify</p> <p>Responsible Care Management System</p> | <p>HOW THE SELECTED PROCEDURES MANAGE THE RISKS</p> <p>The compliance with effluent quality standards is checked by regular monitoring of effluents at the site level (e.g. Industrial Emission Directive in the EU). Every production site must also implement a water protection concept to avoid unanticipated emissions.</p> <p>The concepts define monitoring equipment and retention volumes for contaminated wastewater and leakages. They are checked in regular internal audits. The Responsible Care Management System (RCMS) triggers continuous improvements via many different measures in production plants and improvements in the wastewater treatment plants (WWTP); e.g., the site Guaratinguetá / BASF S.A. in Brazil increased the WWTP removal efficiency due to a new biological tank. First steps of improvements are always taken on the plant level to reduce the emission of a pollutant. If this cannot be achieved, e.g., the production process has an intrinsic and unavoidable emission of the pollutant, end-</p> |



|              |                   |   |   |   |
|--------------|-------------------|---|---|---|
|              |                   | effects on interconnected ecosystems, e.g. bird populations depending on fish for food.   |   | <p>of-pipe technologies are improved, e.g., by making changes to the wastewater treatment plant.</p> <p>MEASUREMENT OF RESULTS/SUCCESS</p> <p>BASF measures the total emission of nitrogen across the group. We define success being a reduction of pollutants. BASF group reduced nitrogen emission from 4600 (t/a) in 2008 to 3000 (t/a) in 2021.</p>   |
| Heavy metals | Direct operations | <p>The source of heavy metals in effluents is production processes using heavy metals as catalysts or raw materials (e.g., for the manufacture of battery materials, catalytic converters) and the production equipment itself. Steel is an alloy of iron and numerous metals to achieve certain properties (e.g., resistance to rust). Small amounts of these metals are released into the effluent through direct contact with process equipment, e.g., piping, pumps, distillation columns, etc. These small releases added up to a total of 17 t in 2021, which translates into a heavy metal release into the aquatic environment of less than 500 mg per t of sales product from the chemicals business. Heavy metals can cause</p> | <p>Compliance with effluent quality standards</p> <p>Measures to prevent spillage, leaching, and leakages</p> <p>Other, please specify</p> <p>Continuous improvement is an objective of the Responsible Care Management System (RCMS)</p> | <p>HOW THE SELECTED PROCEDURES MANAGE THE RISKS</p> <p>The compliance with effluent quality standards is checked by regular monitoring at the site level (e.g., Industrial Emission Directive in the EU). Every production site must also implement a water protection concept to avoid unanticipated emissions. The concepts define monitoring equipment and retention volumes for contaminated wastewater and leakages. They are checked in regular internal audits. The Responsible Care Management System (RCMS) triggers continuous local improvements via different measures in production plants or on site-level. Examples of that are the separation of heavy metals containing wastewater for disposal or the pre-treatment of wastewater by precipitation of heavy metals. First steps of improvements are always taken on the plant level to reduce the</p> |

|  |  |  |  |  |
|--|--|--|--|--|
|  |  | <p>serious toxic effects on aquatic organisms, as they can absorb heavy metals directly from the water or indirectly from food chains.</p> |  | <p>emission of a pollutant. If this cannot be achieved, e.g., the production process has an intrinsic and unavoidable emission of the pollutant, end-of-pipe technologies are improved, e.g., by making changes to the wastewater treatment plant.</p> <p>MEASUREMENT OF RESULTS/SUCCESS</p> <p>BASF measures the total emission of heavy metals across the group. We define success being a reduction of pollutants. BASF group reduced heavy metal emission from 34 (t/a) in 2008 to 17 (t/a) in 2021.</p> |
|--|--|--|--|--|

### 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 as part of an established enterprise risk management framework

**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  
Databases

### **Tools and methods used**

WRI Aqueduct  
COSO Enterprise Risk Management Framework  
Alliance for Water Stewardship Standard  
Other, please specify  
European Water Stewardship standard; World Database on Protected Areas;  
Community Advisory Panels; Environmental Impact Assessment (EIA);  
Sustainability Assessment & Statement; Water Risk Assessment/Water Protection  
Concept; Water stress Aqueduct

### **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  
NGOs  
Regulators  
Water utilities at a local level  
Other water users at the basin/catchment level

### **Comment**

The most relevant risk fields that cover water-related risks for direct operations within the Enterprise Risk Management are "Plant availability", "Change in production quality", "Change in production cost", "Regulation", and "Ecology and environmental protection". The risk management is informed by the tools listed.

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### **Value chain stage**

Supply chain

### **Coverage**

Full

### **Risk assessment procedure**

Water risks are assessed as part of an established enterprise risk management framework

### Frequency of assessment

Annually

### How far into the future are risks considered?

3 to 6 years

### Type of tools and methods used

Tools on the market

### Tools and methods used

Other, please specify

Risk matrix and Together for Sustainability Audits & EcoVadis assessments;  
 Maplecroft Risk Indices; Procurement strategy template; investment decisions.;  
 PwC TIMM Method

### Contextual issues considered

Implications of water on your key commodities/raw materials

### Stakeholders considered

Suppliers

### Comment

We work with over 70,000 Tier 1 suppliers worldwide. They supply us with important raw materials, chemicals, investment goods and consumables, and perform a range of services. Due to the large number of suppliers, they are evaluated based on risk. We take into account the materiality of the supply relationship and country and industry-specific risks. We also use observations from our employees in procurement and information from internal and external databases, such as the TfS initiative. Our third-party evaluations are therefore focused on the most relevant suppliers, which are those Tier 1 suppliers showing an elevated sustainability risk potential as identified by our risk matrices (including both country and industry-specific risks), our purchasers' assessments, or other sources like TfS. Suppliers only have to complete an assessment process once. The results are then made available to all TfS members in a database and are mutually recognized. Suppliers are evaluated by independent experts either in on-site audits or online assessments. The latter is conducted by EcoVadis. In their 360° Watch, they provide us with ad-hoc information if any suppliers have been publicly observed in connection with negative sustainability incidents, including water-related aspects. Furthermore, the topic of water is an explicit component of BASF's sourcing strategies, because of its potential to drive sustainability. This means that, when elaborating a procurement strategy, Buyers are required to consider potential threats and opportunities related to water.

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### Value chain stage

Other stages of the value chain

**Coverage**

Partial

**Risk assessment procedure**

Water risks are assessed as part of an established enterprise risk management framework

**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  
International methodologies and standards

**Tools and methods used**

Environmental Impact Assessment  
Life Cycle Assessment  
Other, please specify  
PwC TIMM Method, internal methods

**Contextual issues considered**

Status of ecosystems and habitats

**Stakeholders considered**

Customers  
Employees

**Comment**

Product safety risks are considered a dedicated risk field within Enterprise Risk Management. This area covers potential harmful impacts by products on people and the environment. The risk management is informed by a risk assessment for products, eco-efficiency, environmental impact analyses, etc.

**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.**

BASF's primary tool is based on the COSO Enterprise Risk Management (ERM) framework. It serves as an aggregation, assessment & monitoring framework for risks at the corporate level, covering direct operations, and upstream & downstream value chain. A relevant risk field covering water-related risks for direct operations within the ERM are e.g., "Ecology and environmental protection". Further tools are used on operational level to determine & analyze risk factors, depending on value chain stage:

DIRECT OPERATIONS

**Tools:** WRI Aqueduct tool is used to determine which production sites worldwide are in water-stressed areas.

In the planning of new sites and plant extensions, an Environmental Impact Assessment (EIA) is used to assess plant impacts on the environment.

**Coverage/implementation:** WRI: Including all worldwide production sites, implemented centrally by Corporate EHS.

**Outcomes/decision-making:** Sites in risk areas need to adopt the European Water Stewardship Standard. Through this management system, appropriate responses to specific water-related risks are derived at the facility level.

EIA: Necessary infrastructure investments above a certain level must be approved at the corporate level. A sustainability assessment including water topics is included.

## SUPPLY CHAIN

**Tools:** Together for Sustainability (TfS) evaluation program: Suppliers are evaluated by independent experts either in on-site audits or online assessments (the latter are conducted by EcoVadis).

**Coverage/implementation:** Suppliers are evaluated based on risk, including materiality and country & industry-specific risks. We select them from our global supplier portfolio (>70,000 Tier 1 suppliers). Relevant suppliers are those showing an elevated sustainability risk potential according to our risk matrices and our purchasers' assessments. We use further sources of information to identify relevant suppliers, such as evaluations from TfS.

**Outcomes/decision-making:** If we identify deviations from standards, we ask suppliers to implement corrective measures. We support them, e.g., by providing training. In case of ongoing, serious violations of the standards defined in our Supplier CoC or international principles, we reserve the right to impose commercial sanctions. These can go as far as termination of the business relationship.

## CONTEXTUAL ISSUES

All contextual issues are integrated as they might impact our ability to operate, tarnish our reputation, or lead to fines in case of violations.

- **Sufficient good quality freshwater** is vital for our operations (used as a coolant, solvent, cleaning agent, and for production of products) to secure our ability to produce.
- To systematically detect the **potential for stakeholder conflicts**, we have identified all our production sites within water-stressed areas.
- **Risks emerging from the supply chain** could have negative impacts on us (e.g., potential supply interruptions due to insufficient water management could ultimately affect BASF's business continuity).
- We closely monitor **current and emerging regulations** to facilitate a timely adaptation process to changing legal requirements and e.g. initiate necessary investments.
- **Biodiversity** is the foundation for numerous **ecosystem services**, e.g., pollination, water purification, and soil formation. As a chemical company, we depend on ecosystem services and have an impact on them.
- Our employees' health and well-being have top priority for us and **access to clean water and sanitation** are always provided. We support the **WASH** goals with targeted projects in neighboring communities of our operations.

## STAKEHOLDERS

- **Customers** are essential for our success and are considered key stakeholders. We must safeguard their health when using our products.
- Our strength lies in our team of qualified **employees**. Production efficiency and quality, and production/employee safety at our production sites may be affected by a lack of awareness regarding water-related topics.
- It poses a reputational risk to BASF that can lead to reduced market valuation if **investors** perceive our activities not to be aligned with water security.
- As a chemical company, BASF is aware of the responsibility we have towards **local communities** and **other water users** around our sites (e.g., potential health-related impacts through contamination).
- **NGOs** are relevant stakeholders because it could lead to reputational damages for BASF if they should come to believe that BASF is not fully transparent and cooperative about water-related issues (e.g., contamination events).
- Withdrawals and discharges must comply with national, state, and local regulations and permit authorizations. We maintain cooperative relationships with **regulators** and **water utilities at a local level** (e.g., to address any potential conflicts regarding water use, pricing, etc.).
- In our holistic water-related risk management, our **suppliers** are one of the pillars of supply chain resilience (negative impacts on our business are e.g. potential supply interruptions).

## 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

We understand the risk to be an event that can negatively impact the achievement of our operational or strategic goals. We define opportunities as potential successes that exceed our defined goals. A specific risk or opportunity is considered as having a substantive impact if the resulting deviation from planned earnings exceeds €10 million. We have further defined the magnitude of impact to be linked to the following net financial implications for BASF's EBIT: High = more than €100 million, Medium = €10-100 million, Low = less than €10 million. If a new risk is identified that could have an impact on earnings of more than €10 million or bears reputational risks, it must be immediately reported to the Board of Executive Directors.

#### DESCRIPTION OF QUANTIFIABLE INDICATORS

(a) Potential financial implications for BASF: Depending on the nature of the risk or opportunity, different methods for quantification are considered. In case of a clear understanding of the

direction of change driven by the risk/opportunity, the effects will be quantified based on expert assessments of the potential level of change and cause-effect relationships. If the direction of change is unclear, i.e., the effect can be positive or negative and thus represents a volatility/uncertainty, a case-specific probability distribution over the impact range is estimated. (b) Probability of occurrence: Financial impacts will only be considered where a risk or opportunity has a probability of occurrence of at least 1% or the potential to threaten BASF’s license to operate. The method for estimation of probability depends on the nature of the risk or opportunity. In case statistical data about the occurrence of the risk/opportunity are available (e.g., knowledge about return periods of weather events), such information will be the basis for the calculation of likelihoods. If no such statistical relationship can be relied on (e.g., when assessing the probability of implementation of certain policy measures), the likelihood will be subject to expert estimates. We classify probabilities as follows: low = less than 30%, medium = 30-70%, high = more than 70%.

### 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 | 2  | Less than 1%                              | In total, around 25% of our production sites are located in water stress areas according to Aqueduct 3.0. The site in Freeport is associated with risks that have a potential substantive financial impact. The site in Ludwigshafen is exposed to supply chain-related risks that have a potentially substantive financial impact |

### 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**

United States of America  
Brazos River

**Number of facilities exposed to water risk**

1

**% company-wide facilities this represents**

Less than 1%



**% company's total global revenue that could be affected**

1-10

**Comment**

The site in Freeport is associated with water stress-related risks that have a potential substantive financial impact.

**Country/Area & River basin**

Germany

Rhine

**Number of facilities exposed to water risk**

1

**% company-wide facilities this represents**

Less than 1%

**% company's total global revenue that could be affected**

1-10

**Comment**

The site in Ludwigshafen is exposed to supply chain-related risks that have a potential substantive financial impact.

**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**

United States of America

Brazos River

**Type of risk & Primary risk driver**

Chronic physical

Water scarcity

**Primary potential impact**

Increased operating costs

**Company-specific description**

BASF's Freeport site in the Brazos River basin is one of the largest sites the company operates in North America. The North-American region accounts for about a quarter of BASF's sales. The specific risk for our Freeport plant is constituted by several drivers: Higher municipal and industrial demand in the area is expected for the next decades.

This could result in an increased competition of different users for the existing water sources (river water, groundwater) and an increased price for water in the future. Production in 2021 was about the same as in 2020 and water demand decreased by about 10%. The changes are due to normal fluctuations due to maintenance, shut-offs, etc. In the future, alternative sources for water may need to be considered as well as internal efficiency measures. Former analyses show that 5% of annual withdrawal of the site might have to be substituted by desalinated water if other alternative sources are not sufficiently available. Using this option would result in significantly higher operating costs. Besides higher operating costs, the increased use of desalination and therefore higher energy demand, would in turn have a potential negative impact on the carbon footprint of our Freeport plant and run against reaching BASF's climate goal.

Method of analysis of risk:

- 1) Assessment of current & future water demand vs. availability at the site (source e.g., Aqueduct).
- 2) Investigation of additional water sources and intensive internal re-use.
- 3) Economic assessment of alternative water supply options. Depending on global economic development we continuously update our expected water demand taking multiple options into consideration.

**Timeframe**

4-6 years

**Magnitude of potential impact**

Medium-low

**Likelihood**

Likely

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

Yes, a single figure estimate

**Potential financial impact figure (currency)**

400,000

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

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

**Explanation of financial impact**

We calculated assumed additional operational costs for water desalination to cover a part of the site's water supply. Factors used to determine the relevant share of water supply are the higher water demand expected in the area in the future, as well as improved efficiency of existing facilities, not taking into account potential extensions of the site. In this scenario, 5% of the total annual water withdrawal volume of the site could be affected and might have to be substituted by desalinated water if we are not able to balance this using alternative sources. We estimated additional costs per m<sup>3</sup> of desalinated water based on industry reference values. Time horizon: Yearly impact,

which will manifest after the establishment of an alternative water supply (i.e., within 4-6 years, as described above).

### **Primary response to risk**

Secure alternative water supply

### **Description of response**

#### RESPONSE STRATEGY

We are optimizing our infrastructure planning to secure a reliable water supply (considering alternative water sources) while minimizing additional operational and investment costs. This involves the in-depth assessment of the current and future water situation in the Freeport Area, of BASF's current and future water requirements to define the scale and layout of the required infrastructure. All options are evaluated, i.e., surface water, expanding existing supply contracts and/or sourcing municipal wastewater as raw material, increased well water use, and seawater desalination. BASF Freeport site continues long-running community partnerships with our private and public utility providers, community organizations, regulatory agencies, and neighbors. In the long run, the aforementioned measures are a significant step forward for long-term freshwater supply security. Further, BASF's Freeport site has already implemented one alternative reclaimed water source from the City of Clute and brackish groundwater sourcing. Additional water can be sourced and secured from surface water, wells, and seawater (most abundant, but water desalination is the most energy-intensive option). The BASF Freeport site has sourced and contracted with Brazos River Authority (BRA) to secure an estimated 35% to 45% of the site's current water supply volume. In addition, BASF has purchased a reservoir with senior water rights that have the potential to represent more than 100% of the current water supply for the Freeport Site. Due to the benefits of the new options for surface water supply, BASF has lowered the development priority for the desalination option. The site continues to pursue optimization opportunities to reduce water use on site. BASF Freeport site calculated assumed additional operational costs for the new surface water supply of the purchased raw water reserves from the Brazos River Authority and the new reservoir to be at a price well below the cost increases of the current contract cost and below the cost of desalination project water supply estimates. This surface water solution also has a reduced CO2 impact due to the lower energy requirements for the purification of the water supply.

#### TIMESCALE

BASF has already increased the use of well water and the use of reclaimed sanitary water from the City of Clute. Additional measures like the desalination plant or the reservoir are planned to be put in place medium-term, depending on site development.

### **Cost of response**

150,000

### **Explanation of cost of response**

The costs of the response strategy (infrastructure planning) were estimated at a moderate level. Infrastructure planning requires mainly personnel resources. We calculate the required resources as 1 FTE, at an estimated cost of 150,000 € per FTE. Infrastructure planning costs are not significant in relation to overall operational expenses at the facility. The surface water supply options provided above are secured at a more economical financial advantage than the estimated cost of the desalination option. Due to the competitive nature of water supply in the region, costs for additional sourced surface water supply are not detailed in this response. This is a recurring cost position.

## 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

Germany  
Rhine

### Stage of value chain

Supply chain

### Type of risk & Primary risk driver

Acute physical  
Drought

### Primary potential impact

Supply chain disruption

### Company-specific description

Production at BASF's largest site Ludwigshafen depends on the adjacent River Rhine in two ways: (a) withdrawal of water mainly for cooling purposes, (b) transportation of raw materials and final products via barges (about 40% of all goods that are transported to or from the site are transported on the river). Based on extreme weather / Rhine water level conditions experienced at the site over the last decades, like the drought and heatwave of 2003 and the flood in 2013, the robustness of site operations for such events was increased constantly by various measures (e.g. pump systems for low water level, adapted management plans, options to switch mode of transport, rebalance production across the global portfolio of assets). Additionally, BASF assessed physical risks from climate change for the site in 2015 and concluded that significant risks of extreme weather events will materialize beyond 2050 and that the existing mitigation measures are therefore still appropriate. However, in 2018, the site experienced an exceptional drought and heat, which caused an extremely long and intense phase of low river water levels and very high water temperatures during the peak of the heatwave. As a consequence, the high water temperature was limiting cooling capacity and low water levels were limiting transport by barge. The existing measures were insufficient to

mitigate all impacts, which ultimately led to decreased production capacity and a negative earnings impact of around €250 million mainly due to missing transport capacities for raw materials. The event raised the question of whether global warming has already changed the likelihood of occurrence and/or intensity of extremely low water level and/or high water temperature events at the site. In 2021 BASF performed a dedicated scenario analysis for low water events and associated risks based on climate projections for the River Rhine provided by the German federal climate adaptation service "DAS-Basisdienst". This analysis showed a) the 2018 event was a rare extreme event and b) the risk for comparable events with the previously described impacts is increasing in the coming decades depending on the climate change scenario.

**Timeframe**

1-3 years

**Magnitude of potential impact**

High

**Likelihood**

Very unlikely

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

Yes, a single figure estimate

**Potential financial impact figure (currency)**

250,000,000

**Potential financial impact figure - minimum (currency)**
**Potential financial impact figure - maximum (currency)**
**Explanation of financial impact**

The quantification of the risk is based on the following assumptions: the figure represents the negative earnings impact due to limited production capacity (i.e. the delta between planned and realized production; further details regarding the figures are subject to confidentiality) at the Ludwigshafen site in 2018, which was triggered by extreme weather in the respective year (high water temperature limiting cooling capacity, low water level limiting transport) and is considered as an estimate for impacts of similar future events (without any further adaptation).

**Primary response to risk**

Upstream

Other, please specify

Increase supply chain resilience (local storage, alternative transport modes)

**Description of response**

DESCRIPTION OF RESPONSE

In 2019, we included Climate Resilience in the central strategic goals of the

Ludwigshafen site (Zukunftsbild Werk Ludwigshafen) to challenge major projects if they contribute to climate resilience. Under this umbrella, we initiated several targeted measures to increase the resilience of the Ludwigshafen site against potentially more frequent and prolonged phases of very high water temperature and very low water levels. Progress and status of these projects are reported biannually directly to site management, which reports directly to the board. In addition, BASF is a co-signatory to the Federal Ministry of Transport's 'Low Water Rhine' action plan presented in 2019. The navigability of the Rhine must be improved in the coming years with various measures.

To master the logistical challenges, we have developed an early warning system for low River Rhine water levels together with the Federal Institute of Hydrology, which enables accurate long-term forecasts for our supply chains. We expanded logistics infrastructure and capabilities to be able to shift to alternative modes of transportation.

#### TIMESCALE

Since 2019 BASF has chartered various ships suitable for low River Rhine water situations. Additionally, BASF initiated and developed together with external partners an innovative barge that is suitable for extremely low water. Concerning high water temperatures, we have increased the cooling capacity for our production in 2019 and 2020 by optimizing and expanding re-cooling systems. In 2021/22 further measures improved the control of our cooling water network.

As a result, the usability of the waterway has been prolonged as a mode of transport during low water levels and the flexibility to switch between different modes of transport has been increased. The measures already taken in 2019 enable us on the cooling water side to master a weather scenario like in 2018.

#### Cost of response

23,000,000

#### Explanation of cost of response

The figure of €23,000,000 represents the total costs of immediate measures from 2019 until 2022, initiated to increase the resilience of the Ludwigshafen site and can be attributed 50% each, to measures regarding logistics and expansion of cooling capacity mentioned above.

### 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

Products and services

## Primary water-related opportunity

Other, please specify

Increase the proportion of products that contribute particularly to sustainability in the value chain, and are characterized by, on average, higher growth rates and profitability.

## Company-specific description & strategy to realize opportunity

### ACTIONS TAKEN

Using the Sustainable Solution Steering method BASF conducted sustainability assessments (also about water) of its entire product portfolio (origin of opportunity therefore company-wide). To identify products with a substantial sustainability contribution (=Accelerator products), solutions with no sustainability issues are subject to the Check for Sustainability Value Contribution. Within the check, the significance of solutions' sustainability contribution and the competitive environment are considered. A substantial contribution is established if the solution's performance is essential for enabling the sustainability benefit in the life cycle. Action to realize opportunity: We want to strengthen the sustainability focus of our product portfolio and significantly increase sales of Accelerator products.

### STRATEGIC RELEVANCE

Accelerator products make a substantial sustainability contribution in the value chain. Therefore, we are deeply integrating Sustainable Solution Steering into the R&D pipeline, in business strategies as well as in merger and acquisition projects. In 2021, we generated sales of €24.1 billion with Accelerator products (2020: €16.7 billion) – already reaching our target for 2025. Accelerator products account for 33.9% of the assessed relevant portfolio. In 2021 products and solutions related to €1.7 billion in sales made a particular contribution to water improvements in the value chain. This signifies that the potential of the Accelerator approach is already being realized.

### EXAMPLE/CASE STUDY INCLUDING TIMESCALE

**Situation:** Classic runway and road de-icers, like urea or propylene glycol which are commonly used e.g. at airports can have negative impacts on water (e.g. if washed into groundwater).

**Task:** Develop solutions with lower environmental impact as existing products.

**Action:** BASF developed a solution from formic acid, which is an example of an Accelerator product specifically in the "water" area. Here a global market was developed to replace other chemicals for runway and road de-icing.

**Result:** Formic Acid features excellent biodegradability, reducing wastewater treatment costs and the environmental burden. A growing acceptance has the potential to positively impact water scarcity and pollution.

BASF already met the 2025 target of generating Accelerator sales of €22 billion in 2021. Consequently, the product portfolio steering target will be updated in 2022.

**Estimated timeframe for realization**

Current - up to 1 year

**Magnitude of potential financial impact**

High

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

Yes, a single figure estimate

**Potential financial impact figure (currency)**

1,700,000,000

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

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

**Explanation of financial impact**

In 2021, we generated sales of €24.1 billion with Accelerator products. How financial impact has been calculated: Products and solutions related to €1.7 billion in sales per year make a particular contribution to water improvements in the value chain. The figure above therefore represents the revenue, generated for this opportunity. This signifies that the opportunity is already being realized.

## 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)**

Freeport/ TX/ BASF Corporation

**Country/Area & River basin**

United States of America  
Brazos River

**Latitude**

29.004413



**Longitude**

-95.393282

**Located in area with water stress**

No

**Total water withdrawals at this facility (megaliters/year)**

8,872

**Comparison of total withdrawals with previous reporting year**

Lower

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

6,829

**Withdrawals from brackish surface water/seawater**

0

**Withdrawals from groundwater - renewable**

969

**Withdrawals from groundwater - non-renewable**

0

**Withdrawals from produced/entrained water**

897

**Withdrawals from third party sources**

177

**Total water discharges at this facility (megaliters/year)**

5,689

**Comparison of total discharges with previous reporting year**

Lower

**Discharges to fresh surface water**

5,417

**Discharges to brackish surface water/seawater**

0

**Discharges to groundwater**

272

**Discharges to third party destinations**

0

**Total water consumption at this facility (megaliters/year)**

3,344

### Comparison of total consumption with previous reporting year

Lower

#### Please explain

The coordinates refer to the Verbund site in Freeport.

Change from last year: Water Supply, discharge, and consumption were lower due to lower production.

Classification for changes: 0-15% = about the same, 15-25% = higher/lower, >25% = much higher/lower

Of note: Water consumption is determined by the sum of water evaporated in cooling processes, water in sold products, and water consumed otherwise at the production site (e.g., incinerated water). This measured consumption does not match the difference between total water supply and total water discharge due to measurement uncertainties.

Water stress: WRI Aqueduct was used to determine if the location lies in a water-stress area.

Method of measurement: Withdrawn and discharged water volumes are measured with various methods depending on the method and specific applicability, e.g., pump characteristics, dynamic pressure measurements, ultrasound, or magneto-inductive measurements.

#### Facility reference number

Facility 2

#### Facility name (optional)

Ludwigshafen SE

#### Country/Area & River basin

Germany

Rhine

#### Latitude

49.494739

#### Longitude

8.433164

#### Located in area with water stress

No

#### Total water withdrawals at this facility (megaliters/year)

1,185,959

#### Comparison of total withdrawals with previous reporting year

Lower

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

1,165,767

**Withdrawals from brackish surface water/seawater**

0

**Withdrawals from groundwater - renewable**

18,713

**Withdrawals from groundwater - non-renewable**

0

**Withdrawals from produced/entrained water**

0

**Withdrawals from third party sources**

1,479

**Total water discharges at this facility (megaliters/year)**

1,060,250

**Comparison of total discharges with previous reporting year**

Lower

**Discharges to fresh surface water**

1,060,250

**Discharges to brackish surface water/seawater**

0

**Discharges to groundwater**

0

**Discharges to third party destinations**

0

**Total water consumption at this facility (megaliters/year)**

10,218

**Comparison of total consumption with previous reporting year**

Higher

**Please explain**

The coordinates refer to the Verbund site in Ludwigshafen.

Change from last year: Water abstraction and discharge were lower due to less cooling water abstraction and discharge and the operation of more recirculating cooling units.

Water consumption is higher because of more evaporation from cooling systems.

Classification for changes: 0-15% = about the same, 15-25% = higher/lower, >25% = much higher/lower

Of note: Water consumption is determined by the sum of water evaporated in cooling processes, water in sold products, and water consumed otherwise at the production site (e.g., incinerated water). This measured consumption does not match the difference between total water supply and total water discharge due to measurement uncertainties. At site Ludwigshafen, the discharge of high volumes of cooling water from once-through cooling in open channels is affected by measurement uncertainties.

Water stress: WRI Aqueduct was used to determine if the location lies in a water-stress area.

Method of measurement: Withdrawn and discharged water volumes are measured with various methods depending on the method and specific applicability, e.g., pump characteristics, dynamic pressure measurements, ultrasound or magneto-inductive measurements.

## 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**

BASF Management's Report was audited and approved free of qualification, also covering statements and figures pertaining to sustainability. An audit with limited assurance was conducted in accordance with ISAE 3000 and 3410. Auditor's procedures included detailed document audits of all water indicators reported by all worldwide locations for the purpose of composing aggregated company figures - including water withdrawals total and by source.

### Water withdrawals – volume by source

---

**% verified**

76-100

**Verification standard used**

BASF Management's Report was audited and approved free of qualification, also covering statements and figures pertaining to sustainability. An audit with limited assurance was conducted in accordance with ISAE 3000 and 3410. Auditor's procedures included detailed document audits of all water indicators reported by all worldwide locations for the purpose of composing aggregated company figures - including water withdrawals total and by source.

## Water withdrawals – quality by standard water quality parameters

---

**% verified**

76-100

**Verification standard used**

BASF Management's Report was audited and approved free of qualification, also covering statements and figures pertaining to sustainability. An audit with limited assurance was conducted in accordance with ISAE 3000 and 3410. Auditor's procedures included detailed document audits of all water indicators reported by all worldwide locations for the purpose of composing aggregated company figures - including water withdrawals by quality (freshwater or not fresh water).

## Water discharges – total volumes

---

**% verified**

76-100

**Verification standard used**

BASF Management's Report was audited and approved free of qualification, also covering Statements and figures pertaining to sustainability. An audit with limited assurance was conducted in accordance with ISAE 3000 and 3410. Auditor's procedures included detailed document audits of all water indicators reported by all worldwide locations for the purpose of composing aggregated company figures – including water discharges total and by destination/treatment method.

## Water discharges – volume by destination

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**% verified**

76-100

**Verification standard used**

BASF Management's Report was audited and approved free of qualification, also covering statements and figures pertaining to sustainability. An audit with limited assurance was conducted in accordance with ISAE 3000 and 3410. Auditor's procedures included detailed document audits of all water indicators reported by all worldwide locations for the purpose of composing aggregated company figures – including water discharges total and by destination.

## Water discharges – volume by final treatment level

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**% verified**

76-100

### Verification standard used

BASF Management's Report was audited and approved free of qualification, also covering statements and figures pertaining to sustainability. An audit with limited assurance was conducted in accordance with ISAE 3000 and 3410. Auditor's procedures included detailed document audits of all water indicators reported by all worldwide locations for the purpose of composing aggregated company figures – including water discharges total and treatment method.

### Water discharges – quality by standard water quality parameters

---

#### % verified

76-100

### Verification standard used

BASF Management's Report was audited and approved free of qualification, also covering statements and figures pertaining to sustainability. An audit with limited assurance was conducted in accordance with ISAE 3000 and 3410. Auditor's procedures included detailed document audits of all water indicators reported by all worldwide locations for the purpose of composing aggregated company figures - including discharge quality by standard water quality parameters.

### Water consumption – total volume

---

#### % verified

76-100

### Verification standard used

BASF Management's Report was audited and approved free of qualification, also covering statements and figures pertaining to sustainability. An audit with limited assurance was conducted in accordance with ISAE 3000 and 3410. Auditor's procedures included detailed document audits of all water indicators reported by all worldwide locations for the purpose of composing aggregated company figures - including water consumption.

## 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 | <p>Description of business dependency on water</p> <p>Description of business impact on water</p> <p>Description of water-related performance standards for direct operations</p> <p>Description of water-related standards for procurement</p> <p>Reference to international standards and widely-recognized water initiatives</p> <p>Company water targets and goals</p> <p>Commitment to align with public policy initiatives, such as the SDGs</p> <p>Commitments beyond regulatory compliance</p> <p>Commitment to water-related innovation</p> <p>Commitment to stakeholder awareness and education</p> <p>Commitment to water stewardship and/or collective action</p> <p>Commitment to safely managed Water, Sanitation and Hygiene (WASH) in the workplace</p> <p>Acknowledgement of the human right to water and sanitation</p> <p>Recognition of environmental linkages, for example, due to climate change</p> | <p>BASF's company-wide water policy/position paper (WP) demonstrates the commitment to responsible water use at all our production sites, water catchment areas as well as along the entire value chain.</p> <p>APPLICABILITY</p> <p>BASF's Responsible Care Management System (RCMS) encompasses environmental and health protection for direct operations and our value chain. It comprises global rules, standards, and procedures. Along with the RCMS-EHS documents that apply throughout the group our water policy covers, i.a., the following topics:</p> <p>CONTENT</p> <p>1) Dependency: Since water is needed for chemical production, we are committed to its responsible use along the entire value chain.</p> <p>2) Impact: BASF's production sites impact water through the introduction of thermal energy (cooling water) and the emission of pollutants.</p> <p>3) Performance standards: BASF's production sites adhere to local, regional/national laws and regulations. Internal global standards are set by our RCMS.</p> <p>4) Standards for procurement: Our Supplier Code of Conduct expects suppliers e.g., to use resources efficiently, apply energy-efficient, environmentally friendly technologies, reduce emissions to water, and minimize impacts on biodiversity and water scarcity.</p> <p>5) International standards and (public policy) water initiatives: We set globally applicable standards according to the European Water Stewardship (EWS) initiative. Further, we aligned the policy content with the UN SDGs, focusing on those issues where BASF can make a significant contribution (e.g., the human right to water and sanitation, climate protection, sustainable consumption, and production). We are a member of the global organization Alliance for Water Stewardship (AWS) and are committed to providing access to Safe Water, Sanitation, and Hygiene at the Workplace (WASH).</p> <p>6) Beyond regulatory compliance: Our standards fulfill or exceed existing laws and regulations and take</p> |

|  |  |  |   |
|--|--|--|---|
|  |  |  | <p>globally recognized principles into account (e.g. UNGC principles, Responsible Care Global Charter).</p> <p>7) Innovation: The RCMS includes the core requirement of constantly reviewing performance, improving processes, implementing measures, checking their effectiveness at production sites, and links respective incentives to it.</p> <p>8) Environmental linkages/Climate change: We have set ourselves ambitious goals and are striving worldwide to achieve net zero CO2 emissions by 2050. Also, we want to reduce our GHG emissions worldwide by 25% by 2030 compared with 2018 (Scope 1 and 2).</p> <p> 1</p> |
|--|--|--|---|

 1BASF Position on Water.pdf

## 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 | Please explain   |
|------------------------|--|
| Director on board      | <p><b>CORPORATE STRUCTURE AND RESPONSIBILITIES</b></p> <p>One member of our Board of Directors is responsible for Corporate Environmental Protection. This encompasses the overall responsibility for water issues and strategic as well as investment decisions concerning the mitigation of water-related risks. The head of BASF's Environment, Health and Safety unit, who has oversight for water topics at BASF, reports directly to this Board member.</p> <p><b>EXAMPLE OF WATER-RELATED DECISION</b></p> <p>Board-level decisions were previously made to further improve BASF's resilience to low water levels of the Rhine River, which significantly affected the Ludwigshafen site in 2018. In 2021 the board was continuously informed about the progress of the measures. These included investments in unaffected logistics carriers and the possibility of falling back on unaffected sites within our global Verbund. Moreover, in 2020, the board decided to invest in efficiency measures in the production of Ethylene Oxide at the Ludwigshafen site to save 4.8 million m<sup>3</sup> of river water.</p> |



|                   |   |
|-------------------|---|
| Director on board | <p><b>CORPORATE STRUCTURE AND RESPONSIBILITIES</b></p> <p>BASF's Corporate Sustainability Board (CSB) is headed by a board member and is BASF's central steering committee for sustainable development, including water. It is comprised of selected heads of business and corporate and functional units as well as of the regions. The CSB monitors the implementation of the sustainability strategy and cross-divisional initiatives, defines sustainability goals and approves corporate position papers on sustainability topics – including the water policy/water position paper.</p> |
|-------------------|---|

## 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                                       | Monitoring implementation and performance<br>Overseeing acquisitions and divestiture<br>Overseeing major capital expenditures<br>Reviewing and guiding annual budgets<br>Reviewing and guiding business plans<br>Reviewing and guiding major plans of action<br>Reviewing and guiding risk management policies<br>Reviewing and guiding strategy<br>Reviewing and guiding corporate responsibility strategy | <p><b>HOW BOARD OVERSIGHT IS CONSTITUTED</b></p> <p>Our Management Board reviews at least annually major water-related topics like, for instance:</p> <ul style="list-style-type: none"> <li>- Water-related risks and opportunities</li> <li>- Target performance</li> <li>- Budgets for functions and business units involved in water-related topics</li> <li>- Progress on specific measures supporting BASF's sustainability strategy.</li> </ul> <p>In addition, depending on need, the following topics are addressed:</p> <ul style="list-style-type: none"> <li>- Investment decisions</li> <li>- Requests for approval of specific action plans, e.g. new R&amp;D initiatives.</li> </ul> <p>This range of topics ensures that oversight over water issues is covered from both an operational and a market-driven perspective, that the appropriate strategic decisions are made, and that BASF meets its own commitments.</p> <p><b>RELEASE OF WATER-RELATED INFORMATION</b></p> <p>The board also approves what is released regarding relevant water-related information, including to CDP. Extensive information on the use of water including data concerning emissions and sustainable water management are publicly available in our corporate report and approved by the board.</p> |

|  |  |  |   |
|--|--|--|---|
|  |  | <p>Reviewing innovation/R&amp;D priorities</p> <p>Setting performance objectives</p> | <p><b>EXAMPLE OF SELECTED MECHANISMS</b></p> <p>Through the monitoring of implementation and performance against water-related targets like the establishment of EWS standards at all Verbund sites and sites in water stress areas (monitored in regular environmental audits), the Management Board can keep track of the progress of water stewardship efforts, and thus the company’s efforts to tackle water-related challenges. In case of a clear underperformance, the Board is then able to initiate corrective measures or re-align operational priorities.</p> <p><b>BRIEFING OF THE BOARD</b></p> <p>A Board member, responsible for Environment, Health and Safety (EHS), has the overall responsibility for water topics. This board member is briefed by the head of the corporate EHS unit, who is accountable for water issues. Another Board member chairs BASF’s Corporate Sustainability Board (CSB), which is BASF’s central steering committee for sustainable development, including water topics. It is comprised of selected heads of business and corporate units as well as of the regions. The CSB monitors the implementation of the sustainability strategy and cross-divisional initiatives, defines sustainability goals and approves corporate position papers on sustainability topics.</p> |
|--|--|--|---|

## 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   | <p><b>CRITERIA</b></p> <p>The competence profile of Board members requires many years of management experience in scientific, technical, and commercial fields</p> <p>The board member in charge of Environmental Protection fulfills the role of Chief Technology Officer and was appointed to this role because of their strong background in operations and excellent performance as</p> |

|  |  |   |
|--|--|---|
|  |  | <p>a scientist.</p> <p>A scientific education coupled with many years in leadership functions on the plant floor and as head of product divisions enables this board member to assess water-related issues taking into account environmental standards and targets as well as operational feasibility. The responsibilities of this board member include the role of site director for a major integrated chemical site. This role requires close knowledge of regulations as well as open and transparent communication abilities with the competent authorities and neighborhood committees. Being able to understand the concerns of all stakeholders and assess water-related issues is a key qualification of this board member.</p> |
|--|--|---|

### 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)**

Other C-Suite Officer, please specify  
CTO – Chief Technology Officer

**Responsibility**

Assessing future trends in water demand  
Assessing water-related risks and opportunities  
Managing water-related risks and opportunities

**Frequency of reporting to the board on water-related issues**

Quarterly

**Please explain**

CORPORATE STRUCTURE

The CTO is responsible for the global Environment, Health and Safety and has the highest overall governance responsibility for water topics on the Board of Directors (BoD).

TOPICS

Reports cover i.a. investments (spec. in water stress areas), and strategic topics (e.g., long-term adaptation requirements to prevent water shortages).

Meetings of the Corporate Sustainability Board (CSB) and direct meetings between other BoD members and the Senior VP in charge of Corporate Environmental Protection ensure regular exchange on water issues.

RESPONSIBILITY

Water issues are addressed in the context of immediate relevance, strategic implications, and investment projects. The Corporate Env. Prot. unit defines requirements for the Responsible Care Management System (in agreement with the CTO), oversees monitoring processes, and integrates major global functions in preparing decisions of the CSB on water topics, e.g., corporate env. goal setting, controlling, and reporting.

## 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   | Incentives for members of Board of Directors are directly connected to target achievement. Specifically Sustainable Water Management achievements are part of BASF's corporate goals, Accountability for target achievement lies with the member of the executive board who is in charge of corporate EHS. |

## 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  | Please explain  |
|-----------------|---|--|---|
| Monetary reward | Other C-suite Officer<br>Member Board of Directors in charge of EHS | Other, please specify<br>Implementation of Sustainable Water Management standard | LINKAGE<br><br>BASF published a goal regarding Sustainable Water Management. Failure to reach the goal due to management oversight results in a lower bonus payout for the C-suite Officer. The bonus reduction depends on many factors such as degree of direct accountability, total bonus value, and reduction in performance in other fields/achievement of other goals. For the water sustainability goal, target achievement is measured and published in the corporate report.<br><br>CHOSEN INDICATOR<br><br>Our goal is to introduce sustainable water |

|                            |                              |  |   |
|----------------------------|------------------------------|--|---|
|                            |                              |  | <p>management at all production sites in water stress areas and at our major Verbund sites by 2030 (as described under W8.1a), covering 89% of BASF's total water abstraction. We pursue this by applying the European Water Stewardship (EWS) standard.</p> <p><b>RATIONALE FOR INDICATOR / THRESHOLD OF SUCCESS</b></p> <p>In total, around 25% of our production sites were located in water stress areas in 2021. To avoid any negative impacts and secure the future operations of our sites, we chose to implement comprehensive water management following the EWS standard at 100% of these sites, plus our Verbund sites. We achieved 53.5% of this target in 2021 (2020: 46.2). BASF executives at all involved levels, including the production site managers, are expected to contribute to this publicly announced target.</p> |
| <p>Non-monetary reward</p> | <p>Board/Executive board</p> | <p>Other, please specify<br/>Implementation of Sustainable Water Management standard</p> | <p><b>CHOSEN INDICATOR</b></p> <p>Our goal is to introduce sustainable water management at all production sites in water stress areas and at our major Verbund sites by 2030 (as described under W8.1a), covering 89% of BASF's total water abstraction. We pursue this by applying the European Water Stewardship (EWS) standard.</p> <p><b>RATIONALE FOR INDICATOR / THRESHOLD OF SUCCESS</b></p> <p>In total, around 25% of our production sites were located in water stress areas in 2021. To avoid any negative impacts and secure the future operations of our sites, we chose to implement comprehensive water management following the EWS standard at 100% of these sites, plus our Verbund sites. We achieved 53.5% of this target in 2021 (2020: 46.2). BASF executives at all involved</p>                                     |

|  |  |  |   |
|--|--|--|---|
|  |  |  | levels, including the production site managers, are expected to contribute to this publicly announced target. |
|--|--|--|---|

## 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

## 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?**

PROCESS

The **Board of Directors (BoD)** is regularly informed on the status of topics or sustainability assessments, makes decisions on these with strategic relevance, and monitors the implementation of (water-related) strategic plans and target achievement. As the central steering committee for sustainable development, the **Corporate Sustainability Board** supports the Board and discusses operational matters. It is comprised of the heads of our business/corporate units and regions and a member of the BoD. In 2013 we established an external independent **Stakeholder Advisory Council**, comprising international experts from academia and society who discuss issues with the Board to take into account the expectations and demands of stakeholders.

Reporting directly to the Board, eight **Corporate Center units** are responsible for defining governance and developing steering processes of the Group. **Corporate EHS** is responsible for monitoring and steering environmental performance (e.g. global target on sustainable water management). This unit is connected to worldwide cross-divisional and -regional teams to exchange on activities, align positions to ensure consistency, and engage with local/regional colleagues to ensure activities fit the corporate strategy.

INCONSISTENCY MANAGEMENT

Inconsistencies in positioning are discovered early through a multi-level approach of discussions and exchanges. If inconsistencies prevail, issues are escalated to a higher level along with proposals to resolve them.

## 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 | > 30                           | <p><b>INCORPORATED WATER TOPICS</b></p> <p>Integrated issues are i.a. enabling access to clean water for people, securing and reducing water requirements for food production and industry, etc., reducing and avoiding water contamination, using water responsibly in water-stress areas, and preserving ecosystems and biodiversity on land and underwater.</p> <p><b>HOW AND WHY BUSINESS PLANNING WAS AFFECTED</b></p> <p>BASF aims at securing and extending its competitive position. To tackle the issues and to stay competitive, we constantly work on improving our products and processes. An integral part is improving water management at our production sites through the implementation of an incentivized investment initiative in efficiency projects on plant level (Operational Excellence Program - OPEX). Introducing and implementing sustainable water management has been a cornerstone of our strategy for many years now. Our focus here is on our Verbund sites and on production sites in water stress areas. The aim is to protect water as a resource, to use it as efficiently as possible through recirculation, and continuously reduce wastewater and emissions. Also, on the strategic level, we are committed to contributing to the achievement of the Sustainable Development Goals (SDGs): More and more people need access to food, water, energy, raw materials, housing, and healthcare, while the Earth’s resources are limited.</p> <p>Strategies cover investment into assets and sites which have &gt;40-year time horizon in the Chemical Industry.</p> |

|  |   |              |   |
|--|---|--------------|---|
| <p>Strategy for achieving long-term objectives</p> | <p>Yes, water-related issues are integrated</p> | <p>11-15</p> | <p><b>INCORPORATED WATER TOPICS</b></p> <p>Relevant issues are i.a. water use/stewardship and avoidance of pollution within our own operations/water risk management; water-related impacts of our products regarding water efficiency, possible contaminations; reduction of emissions to water and water scarcity within the supply chain.</p> <p><b>HOW AND WHY BUSINESS PLANNING WAS AFFECTED</b></p> <p>Water is fundamental in chemical production, which is why the responsible use of water is a core element of our Responsible Care Management System and an important part of our commitment to the SDGs. This is also reflected in our position paper on water protection. Our global standards and requirements for water are defined in Group-wide guidelines. These stipulate i.a., that water protection concepts must be implemented at all production sites. They also cover aspects such as process and transportation safety to prevent production and transportation-related product spillages into water bodies as far as possible. Also, we advocate the responsible use of water along the entire value chain. We audit supplier compliance with environmental standards in our regular supplier assessments. For sustainable water management (SWM), the long-term objective is apparent in the 2030 goal of introducing SWM at all water-stressed production sites and all Verbund sites. This requires a continuous commitment to target achievement and regular tracking/reporting of KPIs.</p> <p>Horizon: &gt;10 years as it exceeds our operational planning horizons.</p> |
| <p>Financial planning</p>                          | <p>Yes, water-related issues are integrated</p> | <p>11-15</p> | <p><b>INCORPORATED WATER TOPICS</b></p> <p>Relevant topics are i.a. revenue targets for products with a substantial contribution to sustainability (e.g., enabling higher resource efficiency and water conservation/water resource protection in the value chain).</p> <p><b>HOW AND WHY BUSINESS PLANNING WAS AFFECTED</b></p> <p>We take advantage of business opportunities by offering</p>   |



|  |  |  |  |
|--|--|--|--|
|  |  |  | <p>our customers innovative products and solutions that support their sustainability goals. We segmented our portfolio regarding contributions of our more than 56,000 specific product applications to sustainability (including reduction of water use), using the Sustainable Solution Steering method. Products with substantial sustainability contributions in the value chain are classified as Accelerators. Based on our corporate strategy, we have set ourselves a global target: We aim to make sustainability an even greater part of our innovation power and achieve €22 billion in Accelerator sales by 2025. In 2021, we generated sales of €24.1 billion with Accelerator products. Accelerator sales related to water issues amounted to €1.7 billion. Detailed planning exists regarding the development of innovative products. We anticipate higher demand for products, which are e.g., directed toward water conservation. Our innovation pipeline e.g., in the Agricultural Solutions segment comprises products with launch dates between 2021 and 2031 and a peak sales potential of &gt;€7.5 billion. Horizon: &gt;10 years as it exceeds our operational planning horizons.</p> |
|--|--|--|--|

## 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)**

3

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

-14

**Water-related OPEX (+/- % change)**

1

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

4

**Please explain**

WATER-RELATED EXPENDITURE

The numbers provided here for CAPEX and OPEX reflect investments in all projects

related to environmental protection, including water protection and saving.  
 An example is the ethylene oxide plant at the Ludwigshafen site, where a change in the pipeline route reduces the river water used for cooling purposes by around 4.7 million m<sup>3</sup> compared with the reference period (June 2019 to June 2020). Additionally, BASF invests in adaptation measures (e.g., re-cooling capacity to increase recirculation of cooling water at our Ludwigshafen site).

**CHANGES**

The analysis is based on a linear projection, considering the previous four years (since 2018). Investment activities may show strong variance due to individual investments into e.g., a single re-cooling plant that is allocated for one year. Hence, there will always be dips and peaks related to CAPEX.  
 OPEX development is more stable since facilities are operated for long periods with stable personnel requirements.

**W7.3**

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

|       | Use of scenario analysis | Comment   |
|-------|--------------------------|---|
| Row 1 | Yes                      | The objective of the analysis was to assess the impact of potential environmental conditions at major BASF production sites to complement site strategies and site developments including interruption of supply chains and logistics for BASF products. A Climate Risk Dashboard was established to provide climate data for all production sites under an RCP2.6, RCP4.5 & RCP8.5 scenario. |

**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 | Water-related<br>Climate-related | KEY PARAMETERS<br><br>Development of weather patterns (temperature, precipitation, extreme weather events) and water levels<br><br>ASSUMPTIONS | WATER-RELATED OUTCOMES<br><br>Sites are often better prepared for known risks (e.g., hurricanes in the Gulf of Mexico area), vs. potentially emerging risks. Results are used to drive internal | Results are used to drive internal discussions on resilience toward climate change (incl. linked water-related risks).<br><br>OPERATIONAL RESPONSE AND |

|  |  |  |   |   |
|--|--|--|---|---|
|  |  | <p>Level of GHG emissions driving global warming and subsequent weather impacts such as longer and more frequent droughts.</p> <p>ANALYTICAL CHOICES</p> <p>Data sources: A Climate Risk Dashboard was established to provide climate data for all production sites under an RCP2.6, RCP4.5 &amp; RCP8.5 scenario. The data is delivered by an external service provider using the IPCC scenarios focusing on all major climate perils (heat, drought, wind, heavy precipitation, cold, flood, wildfire, hail). The dashboard is shared with site managers to enable a site-specific risk assessment to complement the site strategies and site developments.</p> <p>Time horizons: Climate data are available until 2100, however, the focus of the risk assessment is the 30-yrs-change being in line with the transition perspective.</p> | <p>discussions on resilience towards climate change (e.g., increase in cooling water capacity to ensure production during drought periods). Most BASF sites require water for their production processes and cooling, and many sites use nearby waterways for logistics. Our scenario analysis shows that climate change is having a long-term effect on regional precipitation patterns for many of the regions where our sites are located resulting in higher risks of business interruptions in the future. Thus, this analysis enables our sites to continuously monitor the changing climatic/environmental conditions and to implement mitigations measures where necessary.</p> <p>For Ludwigshafen, BASF performed a dedicated scenario analysis in 2021 for low water events and associated risks based on climate projections for the River Rhine provided by the German federal climate adaptation service “DAS-Basisdienst”. This analysis showed</p> <p>a) the 2018 event in which the site experienced an exceptional drought and heat, which caused an extremely long and intense phase of low river water levels and very high water temperatures during the peak of the heatwave was a rare extreme event</p> <p>b) the risk for comparable</p> | <p>TIMESCALE</p> <p>Response: For our location in Ludwigshafen, specific measures were taken to mitigate the effects of future physical risks and increase resilience. We have developed an early warning system for low River Rhine water levels together with the Federal Institute of Hydrology, which enables accurate long-term forecasts for our supply chains. We expanded logistics infrastructure and capabilities to be able to shift to alternative modes of transportation. Additionally, BASF initiated and developed together with external partners an innovative barge that is suitable for extremely low water. Concerning high water temperatures, we have increased the cooling capacity by optimizing and expanding re-cooling systems.</p> <p>Timescale: The respective initial measures were implemented in 2019/2020 and complemented by further optimization measures in 2021 and 2022.</p> |
|--|--|--|---|---|

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|  |  |  | events with the previously described impacts is increasing in the coming decades depending on the climate change scenario. |  |
|--|--|--|--|--|

## W7.4

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

#### Row 1

#### Does your company use an internal price on water?

Yes

#### Please explain

Internal valuation/cost allocation: There is a site-specific BASF internal price for provision of water as well as disposal of wastewater depending on local conditions.  
 Cost calculation for new investments: We integrated a price for water and wastewater into our processes for investment decisions. It depends on current and future local situations based on a forecast of water availability and associated costs.  
 Valuation of external costs: BASF assesses its Value to Society in monetary terms using PwC's TIMM method. The scope includes supply chain (tier 1 to n), own operations and customer industries. With regard to water, emissions and consumption are integrated. To quantify and value the costs to society caused by emissions to water, inorganic and organic pollutants and nutrient discharges to water are taken into account. The calculated environmental impact depends on volume of corporate water consumption and respective local water stress level based on a water stress index (WSI).

## 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 | Definition used to classify low water impact   | Please explain   |
|-------|---|--|--|
| Row 1 | Yes   | Products are classified as having low water impact if they <ul style="list-style-type: none"> <li>• enable reduction of emissions into water</li> <li>• enable water savings downstream</li> <li>• improve the aqua tox profile</li> </ul> | The analytical approach is based on the PSA (Product Sustainability Assessment) framework developed by the WBCSD (World Business Council for Sustainable Development). |

|  |  |  |  |
|--|--|--|--|
|  |  | <ul style="list-style-type: none"> <li>• Reduce the water footprint in production</li> <li>• enable water treatment and drinking water purification</li> </ul> |  |
|--|--|--|--|

## W8. Targets

### W8.1

**(W8.1) Describe your approach to setting and monitoring water-related targets and/or goals.**

|       | Levels for targets and/or goals   | Monitoring at corporate level  | Approach to setting and monitoring targets and/or goals  |
|-------|---|--|--|
| Row 1 | Company-wide targets and goals<br>Site/facility specific targets and/or goals<br>Brand/product specific targets and/or goals<br>Basin specific targets and/or goals | Targets are monitored at the corporate level<br>Goals are monitored at the corporate level | <p><b>APPROACH FOR TARGET SETTING AND MONITORING</b></p> <p>The basis for our operations is the company-wide water policy. It demonstrates the commitment to responsible water use at all our production sites, water catchment areas as well as along the entire value chain.</p> <p>Company-wide: Goals are proposed and elaborated by interdisciplinary working groups, making use of scenarios and risks identified with our risk analysis tools and decided upon by the BASF Board of Management. Monitoring of water-related goals and targets is carried out via an established reporting process within our Responsible Care Management System (RCMS). Within the RCMS we want to make sure that relevant contextual factors are included. For this, we maintain a dialogue with government institutions, associations, and other international organizations to keep requirements up to date and include contextual factors e.g., the needs of other users in a river basin, the environmental state of the basin, and developing regulations. These factors are considered when goals are defined. The progress for all company-wide targets and goals is reported in the BASF Annual Report. We report e.g. on our goal to introduce sustainable water management at 100% of our production sites in water stress areas and at all Verbund sites by 2030.</p> |

|  |  |  |
|--|--|--|
|  |  | <p>Facility level: Targets and goals regarding water (e.g. incident avoidance) are agreed upon by the relevant corporate functions and monitored via the company-wide RCMS and/or HSE audits on the facility level. Monitoring results are reported to the respective corporate functions and escalated up to the executive or board level if required.</p> <p>Product level: Targets and goals related to water (e.g. product performance or product characteristics) are defined by the business units as a response to internal agendas and/or external requirements. They are monitored via business-level reporting. Achievements are reported also to the Board of Management, and/or included in BASF corporate communications (e.g. annual report).</p> <p>Basin level: Targets and goals are set by stakeholder organizations, e.g. ICPR (International Commission for the protection of the Rhine river basin), Comunidad de Irrigantes Tarragona (Ebro river basin), Programa Produtor de Agua Guaratingueta (Guaratingueta river basin). Strategies and improvement plans are developed in regular meetings. Targets, goals, and KPIs are published online on the respective website.</p> <p>FORMAL MOTIVATION</p> <p>We identify key sustainability topics with our comprehensive materiality analysis. Here, we take into account topics that we have an impact on, topics that have an impact on BASF, and topics that our stakeholders consider important to us (e.g. water). As a co-founder of the U.N. Global Compact and a recognized LEAD company, we contribute to the implementation of the United Nations' Agenda 2030. Our products and solutions help to achieve the U.N. Sustainable Development Goals (SDGs), among them SDG 6 (Clean water and sanitation).</p> |
|--|--|--|

### W8.1a

**(W8.1a) Provide details of your water targets that are monitored at the corporate level, and the progress made.**

---

**Target reference number**

Target 1

**Category of target**

Other, please specify

Assessing and implementing sustainable Water management

**Level**

Company-wide

**Primary motivation**

Water stewardship

**Description of target**

Introduction of sustainable water management at 100% of our production sites in water stress areas and all Verbund sites by 2030. This covers all production sites equally in water stress areas and all large integrated sites company-wide.

**IMPLEMENTATION**

We pursue this by applying the European Water Stewardship (EWS) standard. In total, around 25% of our production sites were located in water stress areas in 2021. Last year we focused our implementation efforts on sites in Europe and North America. The Standard rests on four principles: sustainable water abstraction, maintaining good water quality, preserving conservation areas, and ensuring continuous improvement processes.

**IMPORTANCE**

Implementation of the standard contributes to achieving water security, as it considers local conditions and aims to prevent and counter negative impacts on stakeholders and ecosystems (like increased water scarcity), by requesting detailed risk assessment and appropriate responses.

**Quantitative metric**

Other, please specify

% of production sites implementing EWS

**Baseline year**

2019

**Start year**

2019

**Target year**

2030

**% of target achieved**

53.5

**Please explain**

We define water stress areas as regions in which more than 40% of available water is used by industry, households, and agriculture. This definition is based on Aqueduct 3.0. In addition, our water target takes into account our Verbund sites. This increases the number of sites included in the water target accordingly.

## PROGRESS

In 2021, BASF introduced sustainable water management at 7 additional sites (2020: 6). This matches the expected progress. The target has not changed. BASF is dealing with a shifting target because production sites get sold or new locations are bought every year, which affects the basis of the calculation (number of sites in water stress areas; sites that have introduced sustainable water management). Numbers are calculated according to the status at the end of a year.

---

### Target reference number

Target 2

### Category of target

Product use-phase

### Level

Company-wide

### Primary motivation

Commitment to the UN Sustainable Development Goals

### Description of target

A significant lever for steering BASF's product portfolio is the Sustainable Solution Steering method. BASF has conducted sustainability assessments and ratings for 98.7% of its company-wide product portfolio. We consider the product's application in various markets and industries. Our so-called Accelerator products make a particular contribution to sustainability, e.g., enabling higher resource efficiency and water conservation/water resource protection in the value chain (and thus contributing to the overarching goal of achieving water security). In 2021, we reached our sales target for accelerator products (€22 billion) with sales of €24.1 billion. The target will be updated accordingly in 2022.

## IMPLEMENTATION

A team of 3 employees is tasked with analyzing products and their sustainability contributions and is responsible for target achievement.

## IMPORTANCE

We focus on innovation-driven growth areas and sustainable technologies to continuously grow the sales of these products.



**Quantitative metric**

Other, please specify

Sales volume of Accelerator products in Euro

**Baseline year**

2019

**Start year**

2018

**Target year**

2025

**% of target achieved**

100

**Please explain**

In 2021, we generated sales of €24.1 billion with Accelerator products (2020: €16.7 billion) – already reaching our target for 2025.

**PROGRESS**

The target achievement is therefore reported here with 100%. Since the target was initially planned to be achieved by 2025, we exceeded the anticipated progress and the target will be adjusted accordingly in the course of 2022. Accelerator products account for 33.9% of the assessed relevant portfolio. 2018 was chosen as the start year, as this was the year when Accelerator products were launched.

**W8.1b**

**(W8.1b) Provide details of your water goal(s) that are monitored at the corporate level and the progress made.**

**Goal**

Engagement with suppliers to help them improve water stewardship

**Level**

Company-wide

**Motivation**

Recommended sector best practice

**Description of goal****DESCRIPTION AND IMPLEMENTATION**

Our goal is to engage with our relevant suppliers (company-wide) by evaluating their sustainability practices, including water management, and developing action plans for any necessary improvements. The evaluation process is based on third-party

assessments and on-site audits.

#### RATIONALE FOR CHOSEN LEVEL

Our over 70,000 Tier 1 suppliers worldwide are evaluated based on risk, considering the materiality of the supply relationship, country and industry-specific risks. We also use observations from our employees in procurement and information from external databases. Our third-party evaluations are therefore focused on our relevant suppliers, which are Tier 1 suppliers showing an elevated sustainability risk potential as identified by our risk matrices, our purchasers' assessments, or other sources like TfS.

#### IMPORTANCE

As shown in W1.1, water availability and quality play an important role in our supply chain. Our Supplier Code of Conduct expects suppliers, i.a., to use resources efficiently, reduce emissions to water and minimize negative impacts on water scarcity. In our holistic water-related risk management, our suppliers are one of the pillars of supply chain resilience and therefore an important building block of our operations. Any risks emerging from the supply chain could have negative impacts on our business (e.g., potential supply interruptions due to insufficient water management that could affect BASF's business continuity).

#### **Baseline year**

2020

#### **Start year**

2019

#### **End year**

2025

#### **Progress**

##### INDICATOR TO ASSESS PROGRESS/THRESHOLD FOR SUCCESS

We are making good progress in our journey towards reaching our 2025 goals. We have tracked the coverage of our supplier sustainability evaluations completed in 2021. We have also monitored our suppliers' improvement during 2021. We use both the spend coverage and the improvement rate as our thresholds of success. By 2025, we aim to have conducted sustainability evaluations for 90% of the BASF Group's relevant spend (=procurement spend with relevant suppliers) and will develop action plans where improvement is necessary. In addition, we aim to have 80% of suppliers improve their sustainability performance upon re-evaluation by 2025.

#### PROGRESS

In 2021, 85% of the relevant spend had been evaluated and of the suppliers re-evaluated, 74% had improved their sustainability performance (compared to 52% in

2019). This is an increase of 22% compared to the baseline year and shows that we are actively promoting sustainability in the supply chain.

### **Goal**

Promotion of sustainable agriculture practices

### **Level**

Company-wide

### **Motivation**

Corporate social responsibility

### **Description of goal**

#### DESCRIPTION AND IMPLEMENTATION

We aim to ensure that palm oil raw materials come from sustainable, certified sources, and actively support the Roundtable on Sustainable Palm Oil (RSPO). Our goal is to only source RSPO-certified palm oil and palm kernel oil, provided it is available on the market. This goal applies uniformly to all company parts and activities that use palm oil and is driven by our purchasing department. By 2025, this voluntary commitment will be expanded to include the most important intermediate products based on palm oil and palm kernel oil.

#### RATIONALE FOR CHOSEN LEVEL

Two of our key renewable raw materials are palm oil and palm kernel oil and their respective derivatives, which we mainly use to produce home and personal care ingredients and, to a lesser extent, food ingredients.

#### IMPORTANCE

Oil palm plantations can contribute significantly to deforestation, loss of biodiversity and climate change from the loss of peatland and may also affect local water resources. We share the widespread concern about these challenges and are committed to reducing environmental impacts. Consequently, our company-wide BASF Palm Sourcing Policy has requirements for protecting and preserving forests and peatland, along with the involvement of local communities in decision-making processes. Sourcing RSPO-certified palm oil products significantly reduces these risks. Hence, the described goal contributes to the overarching goal of achieving water security.

### **Baseline year**

2020

### **Start year**

2020

### **End year**

2025

**Progress**

## INDICATOR TO ASSESS PROGRESS/THRESHOLD FOR SUCCESS

We look at the share of RSPO-certified products within the total palm and palm kernel oil procurement. In continuation of our commitment made in 2011, BASF's goal is to source 100% RSPO-certified sustainable palm oil and palm kernel oil and the most important intermediate products based on palm oil and palm kernel oil by 2025.

## PROGRESS

We purchased 242,946 metric tons of palm oil and palm kernel oil in 2021 (2020: 227,213 metric tons). We again met our own voluntary commitment to source only RSPO-certified palm oil and palm kernel oil. This avoided more than 330,000 metric tons of CO2 emissions compared with the procurement of conventional palm oil and palm kernel oil. We have worked together with The Estée Lauder Companies, the RSPO, and Solidaridad in Indonesia since 2019 to strengthen smallholder structures and sustainable production methods at the local level. The project in the province of Lampung supports around 1,000 independent smallholders in improving their livelihoods and the sustainable production of palm oil and palm kernel oil. The focus is on efficient and sustainable farming practices and health and safety standards. The goal is for at least one-third of program participants to become certified according to the RSPO Smallholder Standard in three years.

**Goal**

Promotion of sustainable agriculture practices

**Level**

Business

**Motivation**

Recommended sector best practice

**Description of goal**

## DESCRIPTION AND IMPLEMENTATION

BASF established a European farm network, to help preserve biodiversity and natural resources using modern agriculture. We are developing biodiversity, soil health and modern sustainable agriculture promotion measures in it together with farmers, experts from science, and nature conservation organizations. The goal is to grow the farm network into a global network.

## RATIONALE FOR CHOSEN LEVEL

This goal tackles issues touched by our Agricultural Solutions business segment, across all countries and activities within this segment (hence "business" was selected).

## IMPORTANCE

Biodiversity is the foundation for numerous ecosystem services, e.g., air quality, climate, pollination, etc. As a chemical company, we depend on ecosystem services like water availability and quality (see W1.1) and have an impact on them. Protecting biodiversity is an important issue also addressed in the UN Sustainable Development Goals (SDGs). BASF contributes to achieving the SDGs and actively supports and implements projects to encourage the protection of biodiversity at the local level. Consequently, in 2016 we signed the Business and Biodiversity Pledge: We commit to deliver solutions for the conservation of biodiversity, its sustainable use, and the fair & equitable sharing of benefits from resources. It includes promoting awareness about the values of biodiversity, acting as ambassadors for responsible stewardship of biodiversity, and regularly reporting on actions.

### **Baseline year**

2008

### **Start year**

2010

### **End year**

2025

### **Progress**

#### INDICATOR TO ASSESS PROGRESS/THRESHOLD FOR SUCCESS

We monitor the participating farms and organizations in the network. We see every new member of the Farm Network as a success for the promotion of sustainable agriculture. The achievement of our goal to establish a global network will be marked by the extension of our activities to other continents outside of Europe. On the individual farm level, we hope to see clear improvements on the indicators mentioned above and the incorporation of new indicators, such as soil health. The unique condition at each location contradicts the establishment of uniform thresholds.

#### PROGRESS

Currently, there are more than 20 farms in the Farm Network, located in Germany, France, the UK, Italy, Poland, Greece, the Netherlands, and the Czech Republic showing how modern farming throughout Europe can help protect ecosystems and resources. Also, the network now includes more than 30 partner organizations in eight countries. Independent experts evaluate the progress of each farm in the Farm Network. Data tracked includes the number of birds, pollinators, and other beneficial insects living on the farm. Water management measures and sustainable soil treatments are also carefully monitored. A different model with the same objectives is currently being pursued with farmers in the USA ("living acres").

## 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  | Company-wide water accounting figures (withdrawals, discharges, consumption) | ISAE 3000             | Statements and figures pertaining to sustainability in the Management’s Report and Consolidated Financial Statements of BASF’s Annual Report are audited. The audit with limited assurance was conducted in accordance with ISAE 3000 (Assurance Engagements other than Audits or Reviews of Historical Financial Information) and ISAE 3410 (Assurance Engagements on Greenhouse Gas Statements), the relevant international auditing standards for sustainability reporting. |
| W8 Targets        | Target and status for European Water Stewardship implementation              | ISAE 3000             | Statements and figures pertaining to sustainability in the Management’s Report and Consolidated Financial Statements of BASF’s Annual Report are audited. The audit with limited assurance was conducted in accordance with ISAE 3000 (Assurance Engagements other than Audits or Reviews of Historical Financial Information) and ISAE 3410 (Assurance Engagements on Greenhouse Gas Statements), the relevant international auditing standards for sustainability reporting. |

## W10. 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.**

## W10.1

**(W10.1) Provide details for the person that has signed off (approved) your CDP water response.**

|       | Job title   | Corresponding job category |
|-------|---|----------------------------|
| Row 1 | Member of the Board of Executive Directors, BASF SE | Director on board          |

## W10.2

**(W10.2) Please indicate whether your organization agrees for CDP to transfer your publicly disclosed data on your impact and risk response strategies to the CEO Water Mandate’s Water Action Hub [applies only to W2.1a (response to impacts), W4.2 and W4.2a (response to risks)].**

Yes