Welcome to your CDP Climate Change Questionnaire 2023

C0. Introduction

C0.1

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

At BASF, we create chemistry for a sustainable future. About 111,000 employees contribute to the success of our customers worldwide in nearly all sectors.

BASF's activities comprise six segments: Chemicals, Materials, Industrial Solutions, Surface Technologies, Nutrition & Care and Agricultural Solutions. In 2022, BASF posted sales of €87.3 billion and income from operations before special items of approx. €6.9 billion. Further information on BASF is available at www.basf.com.

Our corporate purpose, "We create chemistry for a sustainable future", leads to ambitious goals along our value chain. 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, or climate action. We are committed to contributing to the Paris climate agreement and support the recommendations of the Task Force on Climate-related Financial Disclosure (TCFD). We have defined sustainability focus areas in our corporate strategy to meet 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 enables us to make important contributions in the areas of resources, environment, climate, food / nutrition, and quality of life. Dealing with climate change is one of the major challenges for a sustainable future. Thus 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 54.1% and reduce specific emissions by 74.8%. By 2030 we want to reduce 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: Renewable energies for both electricity and steam production (grey-to-green and power-to-steam levers), new carbon-free and low-carbon production processes (new technologies lever), alternative raw materials (bio-based feedstocks lever), and energy and resource efficiency in our production (continuous opex lever).

We also help our customers to avoid GHG emissions. The relevant products were classified as Accelerators “Climate Change and Energy” in our portfolio steering approach “Sustainable Solution Steering” and reflect our wide portfolio of climate protection products. Our target of generating €22 billion in **Accelerator** sales by 2025, which was based on our corporate strategy, was already achieved in 2021 with sales of €24.1 billion. In order to address the growing sustainability requirements in our markets with innovative solutions, we will align our product portfolio even more strongly with climate protection, climate neutrality and circular economy and are updating our methodology and our product portfolio steering target. We will introduce a revised method in 2023. However, the savings generated by our products are still valid, e.g., in building and renovation (insulation). We invest a substantial part of our annual Research and Development (R&D) expenditures (€2.298 billion total R&D expenses in 2022) in product and process innovations. We are strengthening our research activities, especially in battery materials, polymer technologies and catalytic and biotechnological methods. We drive forward cross-divisional projects on topics, such as avoiding CO2 in chemical processes and products, energy efficiency and recycling technologies. 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 Together for Sustainability Standard and has been certified by TÜV Rheinland. We have determined the carbon footprints of around 45,000 sales products.
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 do not guarantee 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.

C0.2

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

Reporting year

Start date

January 1, 2022

End date

December 31, 2022

Indicate if you are providing emissions data for past reporting years

No

C0.3

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

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

C0.4

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

EUR

C0.5

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

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

C-CH0.7

(C-CH0.7) Which part of the chemicals value chain does your organization operate in?

Row 1

Bulk organic chemicals

- Lower olefins (cracking)
- Aromatics
- Ethylene oxide & Ethylene glycol
- Ethanol
- Methanol
- Polymers
- Adipic acid

Bulk inorganic chemicals

- Ammonia
- Fertilizers
- Nitric acid
- Chlorine and Sodium hydroxide
- Carbon black
- Soda ash
- Titanium dioxide
- Hydrogen
- Oxygen
- Other industrial gasses

Other chemicals

- Specialty chemicals
- Specialty organic chemicals
- Other, please specify
  - Approximately 45,000 sales products in total

C0.8

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

Indicate whether you are able to provide a unique identifier for your organization	Provide your unique identifier
Yes, an ISIN code	DE000BASF111

C1. Governance

C1.1

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

Yes

C1.1a

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

Position of individual or committee	Responsibilities for climate-related issues
Chief Executive Officer (CEO)	The CEO of BASF has the overall responsibility for climate protection as part of the CEO's wider responsibility for the Corporate Development Division of BASF, which develops and integrates sustainability in BASF's strategies, and the Senior Project "Net Zero Accelerator", which is bundling and accelerating cross-company activities to reduce GHG emissions. In this role, the CEO takes care of the development of climate protection targets, monitoring of target performance, advancing measures toward target achievement, and promoting/aligning climate-related issues in areas under the responsibility of other Board members (e.g. accounting for greenhouse gas emissions, supply chain activities, sustainable finance). The head of BASF's Corporate Development Division, which has oversight for all climate protection topics in BASF, and the head of the Senior Project "Net Zero Accelerator", which drives cross-company GHG emission reduction activities, report directly to the CEO. EXAMPLE OF CLIMATE-RELATED DECISION In 2021, the CEO initiated the establishment of the Senior Project "Net Zero Accelerator" to push the implementation of measures supporting BASF's climate protection targets. The project kicked off in January 2022 with initially about 80 employees.

C1.1b

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

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Please explain

Scheduled – all meetings	Reviewing and guiding annual budgets Overseeing major capital expenditures Overseeing acquisitions, mergers, and divestitures Overseeing and guiding employee incentives Reviewing and guiding strategy Overseeing and guiding the development of a transition plan Monitoring the implementation of a transition plan Overseeing the setting of corporate targets Monitoring progress towards corporate targets Reviewing and guiding the risk management process	GOVERNANCE MECHANISMS Our Management Board reviews major climate-related topics several times a year, like, for instance: • Climate-related risks and opportunities • Target performance • Budgets for functions and business units involved in climate-related topics - Carbon price forecasts • Progress on specific measures supporting BASF's sustainability strategy. In addition, depending on need, the following topics are addressed: • Investment decisions • Requests for approval of specific action plans, e.g. new R&D initiatives. In the context of reviewing and guiding risk management policies, the Board receives twice a year a summary of the aggregated opportunity/risk exposure of BASF, including climate-related risks. The information is provided by Corporate Controlling and Finance and major points are discussed in Board meetings. This mechanism guarantees that the Board can keep track of changes to the company risk profile (including climate change-related issues) and initiate corrective measures in case of significant changes. EXAMPLE The board regularly oversees target settings and progress towards targets: At least quarterly, the board is informed about the status of our transition to net-zero by the Senior Project "Net Zero Accelerator". In one of the board meetings in 2022, the board decided to follow a linear reduction trajectory to reach the 25%-GHG-reduction goal (2030 vs. 2018).

C1.1d

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

	Board member(s) have competence on climate-related issues	Criteria used to assess competence of board member(s) on climate-related issues

Row 1	Yes	The Supervisory Board works hand in hand with the Board of Executive Directors in a holistic approach to determine suitable Board candidates. The competence profile of Board members requires many years of management experience in scientific, technical, and commercial fields. Moreover, since the Board of Executive Directors of BASF is the highest steering body for all sustainability topics, knowledge about environmental, societal and human rights matters, is a pre-requisite for every board member. All Board Members are responsible for the setting and implementation of our Sustainability Topics, as well as for reaching our ambitious Sustainability targets. Further, the Board members improve their climate-related competencies via exchange with BASF's external Stakeholder Advisory Council which includes renowned experts on climate change.

C1.2

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

Position or committee

President

Climate-related responsibilities of this position

Implementing a climate transition plan
Integrating climate-related issues into the strategy
Setting climate-related corporate targets
Monitoring progress against climate-related corporate targets
Assessing climate-related risks and opportunities
Managing climate-related risks and opportunities

Coverage of responsibilities

Reporting line

CEO reporting line

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

More frequently than quarterly

Please explain

President of the Corporate Development Division

PROCESS BY WHICH THE PRESIDENT IS INFORMED AND MONITORS

The President of the Corporate Development Division represents the highest responsibility for overall governance for climate protection below the Board of Directors (= delegation of governance from Board). The President leads the Corporate Development Division and reports directly to the CEO who is the Board member with overall responsibility for climate-related topics within BASF. The three major units of the Corporate Development Division – strategic planning (including sustainability strategy), technology assessments, economic evaluations – provide core global functionalities for BASF's greenhouse gas (GHG) emission steering, e.g. governance for emission reduction and energy efficiency activities, consideration of GHG emissions in investment decisions, assessment of long-term scenarios, and preparation of top management decisions on climate protection, such as corporate environmental goal setting. The President of the Corporate Development Division has oversight over the measures for GHG emission steering governed by the above mentioned three major units of the Corporate Development Division. Furthermore, the President is briefed regularly on current and emerging climate change-related issues highlighted by the Sustainability Manager heading the "Carbon Steering" unit within the Corporate Development Division, which covers these issues constantly as part of its core responsibilities.

RATIONALE OF ASSIGNMENT

Climate protection is a core element of BASF's corporate strategy, which underpins BASF's purpose "We create chemistry for a sustainable future". The President of the Corporate Development Division has overall responsibility for the development and implementation of the BASF strategy and consequently, the responsibility for climate-related issues embedded in the strategy has been assigned to this role as well.

C1.3

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

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

C1.3a

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

Entitled to incentive

Board/Executive board

Type of incentive

Monetary reward

Incentive(s)

Bonus - % of salary

Performance indicator(s)

Achievement of climate transition plan KPI
Progress towards a climate-related target
Achievement of a climate-related target

Incentive plan(s) this incentive is linked to

Both Short-Term and Long-Term Incentive Plan

Further details of incentive(s)

Annual variable compensation of Board members is based on the achievement of set targets and the company's success. Here, performance according to ROCE, EBIT, and the achievement of BASF's climate protection target are equally important. See the one-year-strategic target and strategic target below. The actual incentive is comprised of a short-term incentive (STI) and a long-term incentive (LTI). For each fiscal year, an STI with a one-year performance period is granted. The STI is based on achieving operational and strategic goals as well as the return on capital employed. The STI is paid out after the Annual Shareholders' Meeting in the following year.

In order to assess the sustainable performance of the Board of Executive Directors, each year the Supervisory Board sets a target agreement with the Board of Executive Directors as a whole. The target agreement contains amongst others one-year strategic targets relating to the further development of BASF, primarily targets for growth, portfolio optimization, investment and R&D strategy, digitalization, sustainability and BASF's corporate values. A performance factor with a value between 0 and 1.5 is determined on the basis of the target achievement ascertained by the Supervisory Board. A target achievement rate of 100 % equates to a value of 1.0 for the performance factor.

The LTI component is granted for each fiscal year, with a four-year performance period. At the beginning of the four-year performance period, the Supervisory Board defines three strategic targets. Sustainability and thus the achievement of our climate goal is one of these targets. Depending on the achievement of these three strategic targets over the four-year performance period, the number of PSUs can increase or decline. To determine this, the number of preliminary Performance Share Units at the end of the four years is multiplied by the weighted target achievement rate for the three strategic targets. If, for example, BASF's GHG emissions exceed a certain level, the target achievement decreases. Economic growth is a pre-requisite for the target achievement.

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

The incentive directly depends on one of our most important KPIs. I.e. effective climate protection (reduction of CO2-emissions by 25% by 2030 compared to 2018). KPIs: BASF has set itself ambitious targets along the value chain. Two of these indicators are particularly important, I.e. "Return on capital employed (ROCE)" – and "Absolute CO2 emissions". As our most important key performance indicators (KPIs), these two metrics are the main indicators used to steer the BASF Group.

Entitled to incentive

Executive officer

Type of incentive

Monetary reward

Incentive(s)

Bonus - % of salary
Salary increase

Performance indicator(s)

Reduction in absolute emissions
Reduction in emissions intensity
Energy efficiency improvement
Increased share of revenue from low-carbon products or services in product or service portfolio
Increased engagement with suppliers on climate-related issues
Increased engagement with customers on climate-related issues
Increased value chain visibility (traceability, mapping, transparency)
Company performance against a climate-related sustainability index (e.g., DJSI, CDP Climate Change score etc.)

Incentive plan(s) this incentive is linked to

Both Short-Term and Long-Term Incentive Plan

Further details of incentive(s)

Depending on the individual function of the officer, a wide range of actions, e.g. increase of process/energy efficiency, reduction of emissions, reduction of supply chain impacts or increase of sales of climate protection products (operational context), is incentivized in bonus (short-term, one-year) and / or salary increase (long term).

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

Depending on the individual function of the officer and the relevant individual targets,, a wide range of actions, e.g. increase of process/energy efficiency, reduction of emissions in our processes, or from sourced energy directly contribute to our KPI of reducing our Scope-1- and Scope-2-emissions by 25% by 2030 compared to 2018 since these reductions are relevant for GHG-reporting as well as to our resource efficiency and safe production KPI. Reduction of supply chain emissions is also incentivized since it decreases the PCFs of our products and thus our customers' GHG emissions. Moreover, it is linked to our responsible-procurement-KPI.

Entitled to incentive

Environment/Sustainability manager

Type of incentive

Monetary reward

Incentive(s)

Bonus - % of salary
Salary increase

Performance indicator(s)

Implementation of an emissions reduction initiative
Reduction in absolute emissions
Reduction in emissions intensity
Energy efficiency improvement
Increased share of revenue from low-carbon products or services in product or service portfolio
Increased engagement with suppliers on climate-related issues
Increased engagement with customers on climate-related issues
Increased value chain visibility (traceability, mapping, transparency)
Company performance against a climate-related sustainability index (e.g., DJSI, CDP Climate Change score etc.)
Implementation of employee awareness campaign or training program on climate-related issues

Incentive plan(s) this incentive is linked to

Both Short-Term and Long-Term Incentive Plan

Further details of incentive(s)

Depending on the individual function of the manager, a wide range of actions, e.g. increase of process/energy efficiency, reduction of emissions, reduction of supply chain impacts is incentivized in bonus (short-term, one-year) and / or salary increase (long term). A technology manager responsible for sustainability may be rewarded for the implementation of a new and less emission-intensive technology, for example.

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

Depending on t process and operations and the relevant individual targets,, a wide range of actions, e.g. increase of process/energy efficiency, reduction of emissions the processes run at a specific plant, directly contribute to our KPI of reducing our Scope-1- and Scope-2-emissions by 25% by 2030 compared to 2018 since these reductions are relevant for GHG-reporting as well as to our resource efficiency and safe production KPI. Implementation of new emission-free technologies (e.g. heat pumps, e-boilers etc.) is also incentivized since contributes to our long-term reduction goals beyond 2030, i.e. net-zero 2050.

Entitled to incentive

Process operation manager

Type of incentive

Monetary reward

Incentive(s)

Bonus - % of salary
Salary increase

Performance indicator(s)

Implementation of an emissions reduction initiative
Reduction in absolute emissions
Reduction in emissions intensity
Energy efficiency improvement
Increased share of low-carbon energy in total energy consumption
Reduction in total energy consumption
Implementation of employee awareness campaign or training program on climate-related issues

Incentive plan(s) this incentive is linked to

Both Short-Term and Long-Term Incentive Plan

Further details of incentive(s)

In the context of continuous improvement of operational excellence, process operation managers are incentivized to increase energy efficiency and reduce emissions in BASF plants. Thus, a wide range of actions, e.g. increase of process/energy efficiency (e.g. by heat integration and related steam savings), reduce fuel use, or increased process yield are incentivized in bonus (short-term, one-year) and / or salary increase (long term). A process manager responsible for energy management may be rewarded for the implementation of energy efficiency measures ensuring continuous improvement and successful ISO-50001 re-certification.

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

In the context of continuous improvement of operational excellence, process operation managers are incentivized to increase energy efficiency and reduce emissions in BASF plants. These yield in reductions in Scope 1 and Scope 2 emissions which directly contribute to our KPI of reducing GHG emissions by 25% by 2030 (compared to 2018).

Entitled to incentive

Other, please specify
Marketing manager/account executive

Type of incentive

Monetary reward

Incentive(s)

Bonus - % of salary
Salary increase

Performance indicator(s)

Increased share of revenue from low-carbon products or services in product or service portfolio
Increased engagement with customers on climate-related issues

Incentive plan(s) this incentive is linked to

Both Short-Term and Long-Term Incentive Plan

Further details of incentive(s)

The marketing manager's performance is measured, amongst other KPIs, against sales targets, including sales of climate protection products. Additional value can be created by increased engagement with a customer, e.g., regarding the decrease of the product carbon footprint of a product or an increase in biogenic content to reduce the customer's Scope 3 emissions. These efforts are incentivized with additional bonuses (short-term, one-year) and / or salary increases (long term).

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

Trying to reduce the PCF of a product, e.g., through the use of renewable energy directly affects our Scope 2 emissions and thus contributes to our GHG KPI of reducing Scope 1 and Scope 2 emissions by 25% by 2030 compared to 2018.

Entitled to incentive

Other, please specify
Project leaders R&D

Type of incentive

Monetary reward

Incentive(s)

Bonus - % of salary
Salary increase

Performance indicator(s)

Reduction in absolute emissions
Reduction in emissions intensity
Energy efficiency improvement
Reduction in total energy consumption

Incentive plan(s) this incentive is linked to

Both Short-Term and Long-Term Incentive Plan

Further details of incentive(s)

R&D managers pursue projects based on individual targets related to progress on the development of new products / processes, for example in our focus research areas derived from the three major areas in which chemistry-based innovations will play a key role in the future: resources, environment and climate; food and nutrition; and quality of life. They also contribute to process development and improved processes, e.g., consuming less energy or showing increased yield). Thus, total energy consumption and

total emissions can be affected, as well as energy and emission intensity. These efforts are incentivized with additional bonus (short-term, one-year) and / or salary increase (long term) if successful.

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

Reducing CO2 emissions in improved processes that consume less energy or fuels or yield more product, directly contributes to our GHG KPI of reducing Scope 1 and Scope 2 emissions by 25% by 2030 compared to 2018.

Entitled to incentive

All employees

Type of incentive

Monetary reward

Incentive(s)

Other, please specify

Bonus - proportional to the amount of cost savings

Performance indicator(s)

Reduction in absolute emissions
Reduction in emissions intensity
Energy efficiency improvement
Reduction in total energy consumption

Incentive plan(s) this incentive is linked to

This position does not have an incentive plan

Further details of incentive(s)

BASF is constantly running suggestion scheme campaigns at different BASF sites. Each idea that is implemented earns a premium paid to the employee which is proportional to the amount of cost savings. Regularly special campaigns are launched that focus on energy savings and carbon emission reductions. If greenhouse gas emissions are avoided an additional CO2 bonus is paid. The ideas implemented in 2022 result in an annual greenhouse gas emission reduction of about 12,000 metric tons of CO2e.

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

Any avoidance of process-related, or energy-related CO2-emissions directly contributes to our 25% reduction goal in Scope 1 and Scope 2 GHG emissions by 2030 (compared to 2018). Scope 3 emission reductions, such as decreased transport are also rewarded by such programs.

C2. Risks and opportunities

C2.1

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

Yes

C2.1a

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

	From (years)	To (years)	Comment
Short-term	0	3	Timeframe aligned with wider enterprise risk management process.
Medium-term	3	10	Timeframe aligned with wider enterprise risk management process.
Long-term	10		Timeframe aligned with wider enterprise risk management process.

C2.1b

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

DEFINITION OF SUBSTANTIVE IMPACT

We understand risk to be any 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.

QUANTIFIABLE INDICATORS USED TO DEFINE SUBSTANTIVE IMPACT

(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 about the direction of change driven by the risk/opportunity, the effects will be quantified based on expert assessments about 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 that 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%.

C2.2

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

Value chain stage(s) covered

Direct operations
Upstream
Downstream

Risk management process

Integrated into multi-disciplinary company-wide risk management process

Frequency of assessment

More than once a year

Time horizon(s) covered

Short-term
Medium-term
Long-term

Description of process

Climate-related risks and opportunities are integrated into the company-wide risk identification, assessment, and management process that is based on the international risk management standard COSO II Enterprise Risk Management – Integrated Framework (2004).
Frequency of assessment: Climate-related risk reporting is systematically integrated into the aggregated opportunity/risk exposure of the BASF Group and is delivered twice a year by Corporate Controlling and Finance to BASF Group's management.

IDENTIFICATION

During the annual update of BASF's catalog of opportunity and risk categories experts from various units such as corporate sustainability, advocacy, corporate technology, investor relations (IR), procurement, and supply chain identify topics that might have a material impact on BASF. Climate change is included as one major driver for risks but also opportunities. This catalog forms the basis for our risk assessment:

Reputation: Teams of Investor Relations, Corporate Strategy, Advocacy, and Corporate Communications monitor external stakeholders' (e.g. investors, analysts, NGOs, media) expectations and brand perception and report major risks to the Board of Directors on a regular basis.
Market development: BASF's economic intelligence and strategy teams are screening the market for possible future developments for BASF's key customer industries. They discuss trends relevant at the corporate level, e.g., regarding fit with the BASF strategy, and derive options for our businesses. Additionally, a disruption radar was developed to understand potential major strategic threats.
Technology: BASF's corporate technology experts regularly review new technological developments regarding their potential for process optimization and improved environmental performance, including lower emissions. The findings are integrated into medium-term and long-term strategic analyses on the future of BASF's production setup.
Regulatory: A global team of energy and climate policy experts analyses local and regional developments of regulation affecting BASF directly (e.g. carbon pricing systems) or indirectly via BASF-relevant value chains (e.g. regulation for products of key customers). In addition, the corporate Energy and Climate Policy group reviews aggregated effects of global progress on climate protection (e.g. Paris Agreement). Experts from BUs and central functions evaluate the effects on BASF business and decide on risk mitigation measures.
Climate/weather change: A climate risk dashboard provides information about potential physical risks from climate change for our production sites in Europe, Asia, North America and South America. This information is shared with site managers to enable a site-specific risk assessment to complement the site strategies and site developments. The assessment includes a view on interruption of supply chains and logistics for BASF products, i.e. upstream and downstream risks.

ASSESSMENT

All risks and opportunities are evaluated based on (a) their potential financial implications for BASF and (b) their probability of occurrence, with the results of the assessment highlighting those risks and opportunities which can have a substantial impact (>€10 million deviation from planned earnings / >1% probability of occurrence or threat to license to operate).
The ERM framework, as laid out in a BASF Risk Management Policy and the Risk Management Process document, ensures that all risks and opportunities (including those related to climate as provided) are reported according to the same principles of quantification in a comparable manner.
Corporate Finance coordinates the integrity of the framework, guides reporting units, and conducts an analysis of all reported risks with the goal to identify cross-divisional, cumulative risks and to assess the aggregated possible impact.
Time horizon(s): Depending on the type of risk/opportunity, the time horizons considered vary. For instance, regulations regarding Emissions Trading Schemes (ETS) and risks connected to it, are already currently affecting our operations (short-term perspective), while emerging regulation requires a medium- and long-term perspective.

RESPONSE

Following the principle of decentralized ERM, climate-related risks and opportunities are usually managed by the local, regional, and corporate business and functional units responsible for identifying and assessing them. These units take the first decision to mitigate, transfer, accept or control climate-related risks, to capitalize on opportunities, and to prioritize risks in line with the policies and requirements laid out in the general ERM policies and requirements. In view of risks/opportunities of higher potential impact, these units also decide to escalate findings and decisions to upper management levels. Additionally, BASF's Risk Committee reviews the BASF Group's risk portfolio at least twice a year to evaluate any adjustments to risk-management measures and informs the Board of Executive Directors of these.

C2.2a

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

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	RATIONALE FOR RELEVANCE BASF as an energy- and emissions-intensive company is directly affected by current and emerging regulations targeting energy use and efficiency as well as reduction of emissions. Such regulation can result in significant cost burdens for production. EXAMPLE A high number of power plants and chemical plants of BASF are regulated under the European ETS. Changes in prices for emission certificates can have a substantial impact on their cost of production. Hence, a team of experts from business units and central functions analyses emission certificate costs for all BASF plants included in the EU ETS based on the plants' emissions profiles as well as current and estimated future prices of certificates.
Emerging regulation	Relevant, always included	RATIONALE FOR RELEVANCE BASF as an energy- and emissions-intensive company is directly affected by current and emerging regulations targeting energy use and efficiency as well as reduction of emissions. Such regulation can result in significant cost burdens for production. EXAMPLE BASF has operations in China, which may be affected by the national ETS, potentially leading to higher operational costs for BASF based on

		the GHG emissions that fall under the scheme. A team of experts from business units and central functions conducts an impact assessment for the planned regulation.
Technology	Relevant, sometimes included	RATIONALE FOR RELEVANCE New technologies in GHG-intensive sectors in general and the chemical sector in particular (e.g. steam cracker with electric heating, carbon capture, and storage or use) may result in a step change of production processes. BASF with its wide range of assets often interlinked for process optimization (Verbund principle) needs to be aware of these changes to maintain a competitive production setup. EXAMPLE BASF's corporate technology experts regularly review new developments for power-to-x technologies, given that chemicals are discussed to be a potential option for energy storage and sector coupling under the power-to-x concept. The findings are integrated into medium-term and long-term strategic analyses on the future of BASF's production setup.
Legal	Not relevant, included	RATIONALE FOR RELEVANCE BASF monitors the development of litigation in all areas and geographies relevant to the company. While there is an overall increase in climate change-related litigations, the current main focus is not on the chemical industry. Based on BASF's ambitious climate targets, BASF's risk to become subject to lawsuits or other forms of legal disputes with a clear relation to climate change is seen as low in the medium-term. Given that there are no clear and substantive early warning signs of company-specific risk from the trend monitoring, legal risks from climate change are not considered relevant now. Please note that potential risks arising from current or future regulations are also categorized as legal risks within the BASF risk management and are monitored as described above under "current/emerging regulation".
Market	Relevant, sometimes included	RATIONALE FOR RELEVANCE BASF offers approximately 45,000 sales products for a wide range of value chains, e.g. automotive, construction, and food. Megatrends in our customer industries may become a risk or opportunity for parts of our product portfolio, depending on the change in customer demand. Some of these changes may be driven by climate-related aspects (e.g. automotive: trend towards electric vehicles), while other parts of the business are less affected by climate change (e.g. pigments). Hence, assessment of climate-related market risks only plays a more important role for the part of business considered to be more exposed to

		respective changes. EXAMPLE BASF delivers many solutions to the automotive industry. Recent trends to more climate-friendly products and technologies for transport (e.g. electric vehicles) pose a risk to our sales of products for the established customer solutions (e.g. catalysts for mobile combustion engines). Therefore, BASF experts from different business units, cooperating under the internal Global Automotive Steering Committee, conduct impact assessments of the trends. The findings are integrated into strategic considerations for business development.
Reputation	Relevant, always included	RATIONALE FOR RELEVANCE BASF has a significant corporate carbon footprint and is listed amongst the 166 focus companies that are cited by the investor-led initiative Climate Action 100+ as accounting for more than 80 percent of corporate industrial greenhouse gas (GHG) emissions. As a global industry leader, BASF is expected to act proactively on the challenges of climate change. If major investors (e.g. BlackRock, the largest single shareholder) or sustainability-oriented customers were to perceive BASF's business activities to be misaligned with the growing global momentum to act against climate change this could pose a reputational risk to the company that can ultimately lead to lower sales and a reduced market valuation. EXAMPLE BASF is in the focus of various investor-led initiatives like Climate Action 100+ which aims to engage with the world's largest corporate GHG emitters and ensure that they curb their GHG emissions. BASF's Investor Relations (IR) unit is closely monitoring the activities of such initiatives and engaging with the stakeholders.
Acute physical	Relevant, always included	RATIONALE FOR RELEVANCE BASF operates in around 250 production sites in diverse environments all over the world (e.g. Ludwigshafen/Germany, Antwerp/Belgium, Geismar/USA, Guaratinguetá/Brazil, Kuantan/Malaysia, Nanjing/China). Given the global setup of the production base, acute physical risks from climate change cannot be excluded as an intrinsic risk factor with potentially significant impacts on individual sites and therefore need to be assessed for relevance. EXAMPLE BASF operates production sites in regions potentially vulnerable to the

		increased frequency of cyclones due to climate change. Respective changes in physical climate parameters can lead to more extreme weather conditions, which represent an inherent risk to our production capacity. Such kind of risks from climate change for our sites in Europe, Asia, North America, and South America are assessed by BASF-internal experts in close cooperation with renowned research institutions using their own observations and public information. The information is shared with site managers to complement the standard procedures for long-term maintenance of the sites.
Chronic physical	Relevant, always included	RATIONALE FOR RELEVANCE BASF operates in around 250 production sites in diverse environments all over the world (e.g. Ludwigshafen/Germany, Antwerp/Belgium, Geismar/USA, Guaratinguetá/Brazil, Kuantan/Malaysia, Nanjing/China). Given the global setup of the production base, chronic physical risks from climate change cannot be excluded as an intrinsic risk factor with potentially significant impact on individual sites and therefore need to be assessed for relevance. EXAMPLE Most BASF sites require water for their production processes and cooling, and many sites use nearby waterways for logistics. Climate change is projected to have a long-term effect on regional precipitation patterns for many of the regions where our sites are located, including a reduction of the amount of precipitation in some regions (e.g. Gulf of Mexico, and the Mediterranean). Lower precipitation levels may ultimately limit the availability of water at affected production sites and thus represent a risk that BASF must decrease production capacity and/or change the mode of transport due to limited navigability of waterways. Such kind of risks from climate change for our sites in Europe, Asia, North America, and South America are assessed by BASF-internal experts in close cooperation with renowned research institutions using their own observations and public information. The information is shared with site managers to complement the standard procedures for long-term maintenance of the sites.

C2.3

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

Yes

C2.3a

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

Identifier

Risk 1

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Emerging regulation

Carbon pricing mechanisms

Primary potential financial impact

Increased direct costs

Company-specific description

BASF's main regulatory risk derives from additional cost burdens from the EU emissions trading system (ETS) compared to global competitors which have no comparable additional costs.

Context of the impact specific to BASF: In fact, approx. 52% of our Scope 1 and Scope 2 emissions are covered by the EU ETS and have to be backed by the appropriate allowances. The tightening of the EU 2030 climate target from -40% to -55% GHG emission reduction will bring additional costs for BASF: It requires a lower 2030 ETS cap while existing Carbon Leakage protection instruments (e.g. free emission allowances) may be reduced and new instruments suggested by the EU Commission like Carbon Border Adjustments are not able to provide an adequate level of protection. This may result in competitive disadvantages even for the best performers, combined with increasing prices for the certificates which we will have to buy, and substantial administrative costs. Even though the efficiency of BASF's plants is above average, and BASF is leading the transition to GHG-free technologies, a lack of free allowances leads to a loss of competitiveness compared to non-European competitors. In addition to the direct effects in the context of the ETS, we also face indirect effects through higher electricity prices for our power purchase because of increasing costs for emission allowances being passed on from the power sector, while compensation for these costs decreased. We estimate the energy volume of BASF affected by the limitation of compensation to be in the order of 2.3 TWh.

Time horizon

Medium-term

Likelihood

Likely

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

65,000,000

Potential financial impact figure – maximum (currency)

313,000,000

Explanation of financial impact figure

The quantification of the risk is based on the following approach and assumptions: under the revised EU ETS Directive (based on the suggestion by the EU Commission in 2021) with a disproportionate burden between the ETS and non-ETS sectors, the free allocation of allowances may decrease by the order of about 1 to 2.5 million allowances for BASF in consideration of a medium-term time horizon. At the same time, ETS certificate prices may rise significantly during the 4th trading period in an estimated price range of 65 to 125 € per certificate.

Figures used in our calculation:
- Estimated minimum: carbon price 65 €, decrease of 1 million of free allowances: 65 € * 1,000,000 = 65 million €
- Estimated maximum: carbon price 125 €, decrease of 2.5 million of free allowances: 125 € * 2,500,000 = 313 million €

Cost of response to risk

1,000,000,000

Description of response and explanation of cost calculation

RESPONSE

Numerous reduction measures help mitigating cost impacts:
(1) Development and deployment of new CO2-free processes to produce chemicals, with a focus on technologies replacing fossil fuels with electricity from renewable sources, e.g., electrically heated steam crackers for basic chemicals. In Antwerp, BASF is engaged in one of the largest carbon capture and storage projects under the North Sea.
(2) Implementation of improvement processes at production plants: at the end of 2022, 33 sites in Europe had certified energy management systems (ISO 50001), representing about 90% of our primary energy demand in Europe. Each year multiple energy saving projects are assessed and implemented (>200 measures in EU implemented in 2022).
(3) Increasing share of renewable energy in power supply: We have signed long-term purchase agreements for renewable energy with suppliers such as Ørsted and Engie. 39 BASF sites in Europe were entirely or partially powered by emissionfree electricity in 2022.

(4)

For all projects CO2 abatement costs are calculated (fix and variable costs based on scenarios incl. the reduced demand on ETS certificates). BASF follows a linear CO2 reduction pathway from 2018 until 2030. The response cost based on the sum of the projects with lowest CO2 abatement costs needed to meet the CO2 reduction pathway.

CASE STUDY

Situation: We expect increasing ETS certificate prices to lead to higher costs for electricity production in our own power plants.
Task: Improve efficiency in own power plants to reduce emissions and consequently cost burden from ETS.
Action: In 2019, we started the modernization of our combined heat and power plant in Schwarzheide, Germany, with investments of €73 million, which is still ongoing.
Result: As of 2022 the powerplant is able to produce 10% more electricity at a lower emission factor (~10%).

EXPLANATION OF COST

Efficiency projects result in no net additional costs (savings justify initial investment according to BASF's profitability criteria; calculations include a carbon price). Projected capital expenditures for new technologies amount to < €1 billion in 2021-2025. Costs of engagement with stakeholders over this time are estimated at €7.5 million (~10 FTEs dedicated to this task, cost of ~€150,000 each p.a. over 5 years). Considering also additional costs for expanding renewable energy supply, we estimate that total costs sum up to about €1 billion in 2021-2025.

Comment

Identifier

Risk 2

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Acute physical
Drought

Primary potential financial impact

Decreased revenues due to reduced production capacity

Company-specific description

Context of the impact specific to BASF: 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. In 2022 the risk assessment was checked and reconfirmed in the framework of the EU Taxonomy.

Time horizon

Short-term

Likelihood

Very unlikely

Magnitude of impact

High

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 figure

The quantification of the risk is based on the following approach and assumptions: the figure represents the negative earnings impact due to limited production capacity (i.e. the delta between planned and realized production) 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).

Figures used in our calculation: further details regarding the figures are subject to confidentiality.

Cost of response to risk

23,000,000

Description of response and explanation of cost calculation

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 temperatures and very low water levels. The 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.

CASE STUDY

Situation: Low water level of the river Rhine limits its navigability for standard shipping vessels and high water temperature during heatwaves limits cooling capacity.
Task: Work out measures to make the Ludwigshafen site more resilient against long-lasting low-water and high-temperature events of the river Rhine.
Action: To master the logistical challenges, we have developed an early warning system for low river Rhine water levels, 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. 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. The new barge went into operation in Q2/2023. 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.
Result: Longer usability of waterways as a mode of transport during low water levels and increasing flexibility to switch between different modes of transport. The measures already taken in 2019 enable us on the cooling water side to master a weather scenario like in 2018.

EXPLANATION OF COST

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 the expansion of cooling capacity mentioned above.

Comment

C2.4

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

Yes

C2.4a

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

Identifier

Opp1

Where in the value chain does the opportunity occur?

Downstream

Opportunity type

Products and services

Primary climate-related opportunity driver

Development and/or expansion of low emission goods and services

Primary potential financial impact

Increased revenues resulting from increased demand for products and services

Company-specific description

Context of the impact specific to BASF: BASF is the world's largest chemical supplier to the automotive industry. The global light vehicle production is projected to increase to more than 85 million units in 2023. BASF expects the share of chemicals in average vehicles to increase, due to the trend towards energy efficiency and clean energy and the transition to electromobility. It is driven by emissions performance regulations around the world, e.g. in Europe where the EU-wide fleet targets have been tightened to a reduction of 55.5% of CO2 emissions from 2030 on and 100% from 2035 on, compared to 2021. More than 20% of BASF's 2022 sales were linked to the automotive industry. BASF drives new technologies and helps customers meet their sustainability commitments, for example:

(1) We offer advanced cathode active materials (CAM) for lithium-ion (Li-ion) batteries, which play a key role in battery performance, energy density, service life, and safety. We further aim to be at the forefront of sustainable action. For example, BASF aims to provide CAM products in its newly constructed European plants with a leading CO2 footprint thanks to the use of renewable energy, local and energy-efficient processes, and a closed-loop setup.

(2) The growing demand for electromobility is increasing the need for lithium-ion battery recycling. As a leading producer of battery materials with future local production capacities in the three main markets – Asia, Europe, and North America – BASF has in-depth expertise in battery chemistry and process technology. We are utilizing these competencies to address battery recycling as an additional growth market in cooperation with partners along the value chain. Currently, BASF is constructing a prototype plant for battery recycling in Germany, which will allow for the development of operational procedures and optimization of technology to deliver superior returns of lithium, nickel, cobalt, and manganese from end-of-life lithium-ion batteries as well as off-spec material from cell producers and battery material producers.

(3) ChemCyclingTM recycles plastic waste, which is currently landfilled or incinerated, into primary materials, which causes less CO2 emissions than the production of plastics from primary fossil resources (naphtha). The growing implementation of said technologies will likely increase the share of added value from chemical products within the automotive segment, leading to higher overall sales.

Time horizon

Medium-term

Likelihood

Very likely

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

7,000,000,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Assumptions: The market for cathode active materials (CAM) is expected to grow at about 25% per year until 2030 (considering applications in e-mobility, energy storage

systems, consumer electronics as well as all cathode chemistries). This corresponds to a total size of ~7700 kt and a value reaching €150 billion in 2030. Electromobility is a major driver of this growth.
Calculation approach and figures: For 2030, we anticipate annual sales of more than 48 million electric vehicles, compared to 6.6 million vehicles in 2021 [1]. We assume that the corresponding market segments relevant to us will have a total monetary volume of around 70 billion in 2030. We target a market share in these segments of >10% for our battery materials business in 2030, corresponding to >€7 billion in sales in 2030 [2]. This estimate for 2030 was entered as the financial impact figure.

Citation:
[1] IEA (2022): Global EV Outlook 2022
[2] BASF Investor Update, Feb 2023 and BASF Factbook, April 2023

Cost to realize opportunity

4,000,000,000

Strategy to realize opportunity and explanation of cost calculation

We expand production capacities and introduce new products i.a. around battery materials. In Europe, the new CAM plant in Schwarzheide (DE) is using modular design for quick scale-up. We also invest in the recycling of battery materials. In 2023, BASF plans to start up a prototype recycling plant in Schwarzheide. It will apply hydrometallurgical recycling with leading recovery rates and a low CO2 footprint. BASF also plans to start up a commercial-scale battery recycling plant to produce black mass in 2024.
We aim to further increase sustainability in the battery value chain – from collecting end-of-life batteries and recovering mineral raw materials to using these in the production of new battery materials.
We invest in the R&D of low-carbon solutions for the automotive sector, e.g., high-energy density battery materials. By 2025, our battery materials aim to double the real driving range of midsize cars from 300 to 600 km on a single charge and reduce the charging time to 15 min. We engage in partnerships fostering low-carbon mobility (e.g., Global Battery Alliance).

Case Study:

Situation: The growing demand for e-mobility increases the need for battery materials (e.g., CAM) and Li-ion battery recycling, which is currently not available at scale. As a leading CAM player, we want to expand into the growing market and scale up efficient recycling process technology.
Task: Increase production and research capacities, development of operational procedures, and optimization of technology to deliver superior returns of lithium, nickel, cobalt, and manganese from end-of-life Li-ion batteries as well as off-spec material from cell producers and battery material producers.
Action: BASF is building a battery recycling prototype plant in Schwarzheide (production start in 2023). The investment is part of the EU Commission's approved "Important Project of Common European Interest" and received financial support from the Federal

Ministry of Economics and Energy of Germany.
Result: The prototype plant will ensure start-up success for future commercial plants to enable a circular economy for the battery value chain.
Timescale: The production start of the prototype plant in Schwarzheide is 2023.

Financial impact figure:

CAPEX of €3.5-4.5 billion is planned between 2022 and 2030 to build up and expand our capacities for producing and recycling battery materials globally. The average value of €4 billion represents the estimated costs to realize the opportunity.

Comment

Identifier

Opp2

Where in the value chain does the opportunity occur?

Downstream

Opportunity type

Products and services

Primary climate-related opportunity driver

Development and/or expansion of low emission goods and services

Primary potential financial impact

Increased revenues resulting from increased demand for products and services

Company-specific description

Context of the impact specific to BASF: BASF's product portfolio contains innovative solutions for the thermal insulation of buildings. These materials can help save energy and therefore emissions. For example, we offer Neopor®, Styrodur®, and Elastopor® for insulation up to a nearly zero energy home standard. The three products mentioned contributed around 2% to our revenue in 2022 but had a tremendous effect on our customers' emissions. The last publicly available analysis shows that the volumes of Styropor®, Neopor®, and Styrodur® sold in 2019 help our customers to save 62 million metric tons of CO2 emissions over the entire lifecycles of these products when used to insulate existing buildings. These figures refer to sales before the Corona pandemic. We consider these figures appropriate and conservative not to overestimate the impact due to the boom in sales after the Covid Crisis. We expect the global market of these thermal insulation products to grow due to tightening product efficiency regulations and standards as well as higher energy prices. For example, as often cited by the European Commission „buildings are responsible for 40% of total energy consumption and 36% of energy-related greenhouse gas emissions in the EU". Therefore, the decarbonization of buildings is key for achieving 2030 and 2050 climate targets. The revised European EPBD (Energy Performance of Buildings Directive) has requested the Member States to

strengthen renovation strategies. In the context of the EU Green Deal, in October 2020 the EU Commission published a new strategy to boost renovation called "A Renovation Wave for Europe – Greening our buildings, creating jobs, improving lives" (COM(2020)662). It aims to double annual energy renovation rates in the next ten years. This will lead to increasing demand for innovative BASF insulation products for the building and construction sector.

Moreover, we are continuously working to improve the energy efficiency and performance of our offerings, for example by converting customers from HFC- to more climate-friendly HFO-based PU systems especially in the North American region in line with climate control regulations.

Time horizon

Medium-term

Likelihood

Very likely

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

150,000,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

The quantification of the opportunity is based on the following assumptions: According to a roadmap, published by the European Commission in the context of an initiative about the status of renovation of public and private buildings, currently, about 1% of buildings in Europe are renovated per year [1]. We assume that policy measures to increase energy efficiency in buildings (e.g. the European Green Deal) can drive global renovation rates into the order of 1-2% per year (for reference: GlobalABC, IEA and UNEP propose a global target of 3% per year in 2030 to decarbonize buildings in line with the Paris Agreement [2]). The increased renovation rate will lead to a respective growth of the market for insulation materials. We assume growth rates are in line with the market growth of about 2% p.a. This translates into additional annual net sales of >€150 million per year, based on BASF's 2019 sales and market share in the insulation segment.

Citations:
[1] European Commission Roadmap: A Renovation Wave initiative for public and private

buildings https://ec.europa.eu/info/law/better-regulation/have-yoursay/initiatives/12376-Commission-Communication-Renovation-wave-initiative-for-the-building-sector
[2] GlobalABC/IEA/UNEP (Global Alliance for Buildings and Construction, International Energy Agency, and the United Nations Environment Programme) (2020): GlobalABC Roadmap for Buildings and Construction: Towards a zero-emission, efficient and resilient buildings and construction sector, IEA, Paris.

Cost to realize opportunity

100,000,000

Strategy to realize opportunity and explanation of cost calculation

STRATEGY

(1) We expand production capacities and introduce new sustainable products into the market, such as biomass balance (BMB) versions of Styropor®, Neopor® and Styrodur® or recycled products such as Neopor® mcycled.
(2) We engage in several organizations for standards for energy-efficient buildings & construction (e.g. CEFIC, PlasticsEurope, PU Europe,).
(3) We promote the benefits of insulation materials. E.g., in 2020 we became a primary industry partner in the NEST modular innovation building project operated by two research institutes, Empa and Eawag, in Dübendorf (Switzerland).
(4) We invest in R&D of new low carbon insulation solutions to enable recycled versions of our products. Central sustainability tools (e.g. Eco-Efficiency Analysis) support this work.

CASE STUDY

Situation: In context of the European Green Deal, the Italian government is offering homeowners strong financial incentives to improve energy efficiency of their homes (e.g. through thermal insulation). The prerequisite for the highest subsidy, is the use of insulation products that contain a minimum quantity of recycled material (e.g. 10% for expandable polystyrenes / EPS) and have been certified by an independent institute.
Task: To benefit from the governmental subsidies, BASF seeks to offer suitable products that fulfill the requirements of the Italian initiative.
Action: BASF approached the Italian authorities to convince them of the benefits of its solutions and to get Neopor® BMB accepted under the highest subsidy requirements. The BMB insulation boards can save 42% in CO2 emissions over the entire life cycle compared to conventional Neopor®.
Result: Neopor® BMB has been accepted as compliant, making it equivalent to consisting of 100% recycled material. It is now marketed in Italy under the brand name Neopor® BMBcertTM. Italy is so far the only country in Europe where a product following the BMB approach has been classified as equivalent to a fully recycled product.
Timescale of implementation: The opportunity has already been realized successfully in 2021.

EXPLANATION OF COST

In 2022 BASF invested about €100 million in research in the segment “Chemicals” , which includes styrenic foams. Regarding engagement in associations and standardization bodies, we estimate that a low single-digit number of FTEs (cost of ~€150,000 per FTE and year) represent our interests, so the contribution to the overall estimate of costs is marginal and not visible in the total value.

Comment

Identifier

Opp3

Where in the value chain does the opportunity occur?

Downstream

Opportunity type

Products and services

Primary climate-related opportunity driver

Development and/or expansion of low emission goods and services

Primary potential financial impact

Increased revenues resulting from increased demand for products and services

Company-specific description

Context of the impact specific to BASF: BASF is the market leader in the production of certified compostable and soil-biodegradable plastics with products like ecoflex® and ecovio®. These products are used for their environmental performance in the agriculture, consumer, and packaging industry, where they promote organic recycling and healthier soils and tackle the global problem of plastic pollution and persistent microplastic in the environment. Moreover, they promote resource efficiency, which supports climate protection. Recent regulatory initiatives and legislative frameworks represent significant market opportunities for BASF:

1) Separating organic waste will become mandatory in EU Member states by 2024. Certified compostable ecovio® bags make organics waste collection easier while fully biodegrading in compost and do not leave any persistent microplastics behind.
2) New laws in several EU countries (e.g., France and Italy) ban single-use fruit & vegetable and/or lightweight carrier bags while exempting certified compostable (either industrial or home compostable) alternatives. BASF offers several certified compostable ecovio® grades with various bio-based contents that can meet these requirements.
3) China will ban a list of single-use and take-away applications (e.g. bags, food delivery service ware, and food containers) made of non-compostable materials by 2025. Additionally, waste management is to be set up by 2025. We offer a range of ecovio® packaging grades that could serve this market.

4) The EU extends the producer's financial and/or operational responsibility for a product to include the management of the post-consumer stage through Extended Producer Responsibility (EPR). EPR policies generally shift the waste management cost or physical collection partially or fully from local governments to producers. Our certified soil-biodegradable alternatives are out of the scope of the EPR as they fully biodegrade after usage and do not require collection and recycling.
In addition, the Chinese Ministry of Agriculture and Rural Affairs recently announced the promotion of biodegradable mulch films. With ecovio®M, a specific grade for mulch film application, our expertise in agronomy, and know-how in film processing and laying out the mulch film we can support the initiatives. Market studies show that BASF currently has a market share of about 10% in these markets, which are estimated to grow by €300 million in the next years.

Time horizon

Short-term

Likelihood

Very likely

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

30,000,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Assumptions: Market studies show that BASF currently has a market share of about 10% in the agriculture, consumer and packaging markets mentioned above.
Calculation approach and figures: The figure of €30 million describes the assumed additional revenue of BASF if the markets of the described products grow with the mentioned legislative-driven opportunities 1) to 4), while BASF's market share remains at 10% (€30 million = 10% of the total market potential of €300 million; using the lower estimates for the respective market sizes).

Underlying data: Market projections of several national and cross-national associations (e.g., The French Association for Plastic Packaging, The Italian Association for Biodegradable Plastics, Degradable Plastics Committee of the Chinese Standardization Office, The Agriculture Plastics Environment Europe) estimate an additional market potential of these biodegradable plastics of €300 million in the next years. Due to the new legislation in China, we see additional potentials for a change in market size and

market players, but those developments can only be estimated more precisely in the years to come.

Cost to realize opportunity

120,000

Strategy to realize opportunity and explanation of cost calculation

STRATEGY

With global biodegradability research lab capabilities, expertise in polymer compounding, and a dedicated compounding line, BASF is able to seize the opportunities mentioned above. Collaborations with business partners and engagement with associations & stakeholders will help BASF strengthen its market position and promote the issue and its products.

CASE STUDY

Situation: The European Packaging and Packaging Waste Directive is under revision and expected to come into force by 2026. The new draft proposal from the EU mandates certain applications (e.g., very light weight carrier bags) to be compostable and emphasizes importance of design guidelines for different packaging applications to reduce waste.
Task: Create a cross-value chain platform for compostable material in Europe to improve the circularity of materials, focusing on those that are less suitable for this purpose. Compostable applications are to be selected to reduce input contamination in recycling streams and to increase amount of food waste collected and quantity as well as quality of compost produced.
Action: 21 members from across the value chain have been identified (e.g., material producers, packaging converters, composters, certifier bodies). Topics: 1) design guideline for compostable plastics 2) demonstrate certified compostable material can be handled in European organic waste treatment infrastructure 3) show that suggested standards for compostable plastics work “in practice”, 4) inform, educate and engage with various stakeholders (e.g., through guidelines for consumer education and for labelling and claims)
Result: As a pioneer in the field of compostable plastics, BASF has many years of experience and can therefore act as an expert on the platform. The platform will increase the acceptance of compostable plastics on the European market and improve the market opportunities for our ecovio products.
Timescale: The official kick off for this platform is planned for 2nd half of 2023.

EXPLANATION OF COST

Costs of setting-up Compostable By Design Platform estimated at €120,000: membership fee: (€25,000 for two years), material costs for field testing of ecovio products (€15,000), producing products in specific applications and for distribution (€20,000), potential R&D personnel costs (€60,000). No significant additional costs are

expected as they are mainly covered by our standard budgets (e.g., personnel expenses in corporate communication, and general marketing budgets).

Comment

Identifier

Opp4

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Resource efficiency

Primary climate-related opportunity driver

Use of more efficient production and distribution processes

Primary potential financial impact

Reduced indirect (operating) costs

Company-specific description

Context of the impact specific to BASF: BASF's primary energy use amounted to about 52.9million MWh in 2022, highlighting the relevance of energy for our operations. Consequently, energy saving as a measure to increase resource efficiency can make a key contribution to reducing our operating costs. At the same time, the growing awareness and readiness among policymakers to mitigate climate change, which is driven by the Paris Climate Agreement, are leading to new/extended incentives for energy efficiency (e.g., tax cuts, levy exemptions). One example are funding opportunities under the "Federal Grant Programme for Energy and Resource Efficiency in Industry", where companies can receive federal state aid for their investment in energy and resource efficiency. In 2019 BASF had successfully applied for funding of the new liquid waste combustion unit at the Ludwigshafen site. The new standing combustion chamber was implemented in 2022 within the waste incineration plant and was funded on the grounds that it is more efficient than the kiln which it was to replace. 30% of the additional cost of 1.3 million was received as state aid. The new unit not only led to increased disposal capacity but also to higher steam production (replacing steam from a gas-fired boiler and thus substituting natural gas). The steam production efficiency in the kiln was 70%, whereas the new combustion chamber reaches 76%. This way, 6000 t of CO2 can be saved each year (substitution of natural gas through increased efficiency in waste combustion) compared to the previous situation operating the kiln.

Time horizon

Short-term

Likelihood

Virtually certain

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

23,000,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

The financial impact represents the annual monetary savings resulting from 312 energy efficiency measures implemented globally in 2022 under the governance of our Energy Management Teams. Operational excellence projects included a wide range of energy conservation measures resulting in savings of fuel, electricity, steam, cooling water, etc., for example, chemical process modifications, process heat integration, advanced process control systems implementation, lighting, and steam traps, incinerator fuel reductions etc. Each project reported annual savings as “MWh saved”, which were converted to financial savings by multiplying with local cost per MWh, also provided within each project. The sum of all annual savings (implemented projects only) results in the given financial impact figure of €23 million. Due to the high number of measures, a more detailed breakdown seems not sensible.

Cost to realize opportunity

20,000,000

Strategy to realize opportunity and explanation of cost calculation

STRATEGY

We promote energy efficiency by implementing energy management systems at all relevant sites. By the end of 2022, 76 production sites representing 87.7% of our primary energy demand were covered by certified energy management systems according to DIN EN ISO 50001. Further, we run a continuous operational excellence (opex) program triggering annual energy efficiency measures as an important contribution under the opex lever for achieving our climate protection goals.

CASE STUDY

Situation: BASF strives to increase energy efficiency to achieve cost savings and contribute to the corporate climate protection goals.
Task: Identifying, collecting, prioritizing, selecting, and implementing efficiency measures in BASF production, engineering, maintenance, logistics, procurement, and administration.
Action: BASF sites and plants continuously propose opex measures within a central

project database where opportunities are tracked. The measures are evaluated within a specific opex project approval process, which leads to a selection of projects to be implemented. In 2022, 174 additional energy efficiency measures were initiated, 312 measures were implemented, and another 144 entered implementation. The global Energy Management teams monitored their progress in the different plants all over the world.
Result: From the measures implemented in 2022, BASF will save around €23 million per year in energy cost, contributing about 80,000 t of annual CO2e savings. The database allows tracking measures as best practice examples for other sites.
Timescale: The opportunity is already being realized.

EXPLANATION OF COST

Costs of €20 million relate to the investment required in the reporting year to implement the energy efficiency measures proposed and approved within the operational excellence program. Projects which have only entered implementation are not included in the costs. Due to the high number of individual measures, a more detailed breakdown seems not sensible.

Comment

C3. Business Strategy

C3.1

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

Row 1

Climate transition plan

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

Publicly available climate transition plan

Yes

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

We have a different feedback mechanism in place

Description of feedback mechanism

We are continuously collecting feedback via our bilateral exchanges with individual investors and investor groups. Please note that the statutory provisions of the German Stock Corporation Act (AktG) do not provide for the adoption of resolutions concerning management measures by the Annual Shareholders' Meeting.

Frequency of feedback collection

More frequently than annually

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

str-strategy-basf-ar22.pdf

C3.2

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

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

C3.2a

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

Climate-related scenario	Scenario analysis coverage	Temperature alignment of scenario	Parameters, assumptions, analytical choices
Transition scenarios Bespoke transition scenario	Company-wide	1.6ºC – 2ºC	OBJECTIVE Ambition and implementation of global climate politics are decisive for the growth of chemical industry and its customers. To assess impact of different approaches on global climate politics, four scenarios were defined and quantified. Scenario narratives are rooted in different societal mindsets. One scenario aims at a significant global reduction of CO2 emissions, while other scenarios allow for further increasing emissions and higher global warming trajectories. METHODOLOGY Narratives were developed by a team of economists, energy market experts, chemists and technology experts from BASF. Scenarios were quantified in cooperation with Cambridge Econometrics, using their E3ME model. The scenarios cover a temperature range from well below 2°C up to 4°C of global warming. The lower end was selected as representative of temperature alignment here. BASF-specific outcomes were derived from variations of customer industry growth rates within said scenarios, using additional inhouse calculation tools. Results were discussed with

			BASF Operating Divisions (OD). Examples of assumptions: i.a. relative impact of regulation vs. CO2 price driven changes in energy markets; development of regional share of electric vehicles. COVERAGE AND TIME HORIZONS Analyses cover all major regions, countries, and customer industries of BASF. Projections were made up to 2050, as climate policy targets and strategic planning horizons for carbon abatement projects often refer to this time frame. RESULTS Without taking behavioural changes into account, growth rates of major macroeconomic aggregates are quite resilient. Typical outcomes of simulations with high climate protection ambitions and significant behavioural changes are stable GDP growth rates with structural changes in industrial output and demand for chemicals. Scenarios are discussed internally in division-specific workshops. Feedback is fed into the further refinement of scenario results. Scenario-specific datasets are provided for testing the economic viability of investments and strategies in sensitivity analyses.
Physical climate scenarios RCP 8.5	Company-wide		OBJECTIVE Assessment of 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. METHODOLOGY A Climate Risk Dashboard was established to provide climate data for all production sites under RCP2.6, RCP4.5 & RCP8.5 scenarios. 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. Examples of assumptions: Level of GHG emissions driving global warming and subsequent impacts. COVERAGE AND TIME HORIZONS Analyses cover all major regions and countries. We focused on our biggest locations; however, the analysis is available to all our locations globally. Climate data are available until 2100, however, the focus of the risk assessment is on the 30-years-change, in line with the transition perspective. RESULTS Scenario data indicate changes in environmental impact factors depending on the level of global warming, time horizon, and geolocation (e.g. increased drought risk in Ludwigshafen). 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 discussions on resilience towards climate change (e.g. increase in cooling water capacity to ensure production during drought periods).
Physical climate scenarios RCP 2.6	Company-wide		OBJECTIVE Assessment of 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. METHODOLOGY A Climate Risk Dashboard was established to provide climate data for all production sites under RCP2.6, RCP4.5 & RCP8.5 scenarios. 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. Examples of assumptions: Level of GHG emissions driving global warming and subsequent impacts.

			COVERAGE AND TIME HORIZONS Analyses cover all major regions and countries. We focused on our biggest locations; however, the analysis is available to all our locations globally. Climate data are available until 2100, however, the focus of the risk assessment is on the 30-years-change, in line with the transition perspective. RESULTS Scenario data indicate changes in environmental impact factors depending on the level of global warming, time horizon, and geolocation (e.g. increased drought risk in Ludwigshafen). 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 discussions on resilience towards climate change (e.g. increase in cooling water capacity to ensure production during drought periods).
Physical climate scenarios RCP 4.5	Company-wide		OBJECTIVE Assessment of 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. METHODOLOGY A Climate Risk Dashboard was established to provide climate data for all production sites under RCP2.6, RCP4.5 & RCP8.5 scenarios. 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. Examples of assumptions: Level of GHG emissions driving global warming and subsequent impacts. COVERAGE AND TIME HORIZONS

			Analyses cover all major regions and countries. We focused on our biggest locations; however, the analysis is available to all our locations globally. Climate data are available until 2100, however, the focus of the risk assessment is on the 30-years-change, in line with the transition perspective. RESULTS Scenario data indicate changes in environmental impact factors depending on the level of global warming, time horizon, and geolocation (e.g. increased drought risk in Ludwigshafen). 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 discussions on resilience towards climate change (e.g. increase in cooling water capacity to ensure production during drought periods).

C3.2b

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

Row 1

Focal questions

RATIONALE FOR SELECTION OF SCENARIOS

For both, transition and physical risks, scenarios were chosen that cover different levels of temperature increase. To stress-test BASF's ability to mitigate and adapt to climate-related risks, the set of scenarios includes a pathway with very ambitions climate action leading to global warming well-below 2°C, in line with the Paris Agreement, as well as a pathway leading to very high global warming (RCP 8.5).

FOCAL QUESTIONS

Transition scenario:
- How do scenarios with different climate protection ambition impact demand for BASF products? Where are the risks and opportunities?
- What are the perspectives for final consumer demand, e.g. in mobility, nutrition, and housing in alternative scenarios?
- How can BASF products support the decarbonization of the energy sector, improve the energy efficiency in the building sector, and the transition toward a circular economy?
- What are relative growth expectations of relevant countries and industries in different

scenarios?
- What is the level of fossil fuel, energy, power, and CO2 prices in different scenarios? What is the relative role of regulation vs. prices in emission reduction?

Physical scenario:
- Are our assets resilient against the increased severity of natural disasters and changing weather patterns?
- Does BASF have an increased risk of business interruptions due to climate change?

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

Transition:
RESULTS

There are multiple opportunities and risks for BASFs product portfolio. While overall material consumption might decline due to more circularity and a rising service share in private consumption in scenarios with high climate protection ambitions, the chemical industry is also an important enabler in this transition process.
This can be seen e.g., in the energy sector (with products for renewable energy production) or in the mobility sector (with products supporting the electrification of the global car fleet such as battery materials, coolants, and lightweight polymers). Building insulation and smart homes play an important role in increasing energy efficiency in the building sector, triggering demands for specific chemical products.
Overall, the green scenario illustrates the increasing demand for products with a low carbon footprint (achieved via the use of chemically recycled inputs, renewable bio-feedstock, renewable energy, or new electrified production processes) and the need for transparency on the Product Carbon Footprint.

HOW RESULTS INFORMED DECISION MAKING

Scenarios are used as input for long-term feedstock, energy, and CO2 price forecasting, showing the interval of potential price developments and allowing for sensitivity analysis in investment projects. From a regional perspective, different developments of energy and CO2 prices, and different speeds of energy transition must be considered, which is simulated in a regional diversity scenario. These results are also used as input to analyze the relative competitiveness of different investment locations.

Physical:
RESULTS
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 long-term effects on regional precipitation patterns for many of the regions where our sites are located resulting in higher risks of business interruptions in the future.

HOW RESULTS INFORMED DECISION MAKING

This analysis enables our sites to continuously monitor the changing climatic/environmental conditions and to implement mitigation measures where necessary. For our site in Ludwigshafen, specific measures were taken to mitigate the effects of future physical risks and increase resilience. We 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. Moreover, BASF initiated and developed with external partners an innovative barge that is suitable for extremely low water levels. Concerning high water temperatures, we have increased the cooling capacity by optimizing and expanding re-cooling systems. For our scenario analyses, we have taken into account a forecast up to the year 2050 (associated timelines).

C3.3

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

	Have climate-related risks and opportunities influenced your strategy in this area?	Description of influence
Products and services	Yes	INFLUENCE ON STRATEGY The global transition to a low-carbon economy has impacted BASF's portfolio steering process which is now factored into the strategic portfolio analyses conducted by business units, together with corporate strategy to understand if products are (a) benefiting from change (e.g. materials for low-carbon construction or transport); (b) at risk (e.g. catalysts for mobile combustion engines); (c) remaining unaffected (e.g. pigments) and to take appropriate management steps. Taking an aggregate perspective on sales, we conclude that management steps successfully led to tapping first into opportunities for products benefiting from the change, following the growth of renewables (e.g. products for wind, solar power), more sustainable construction (e.g. materials for buildings insulation, see C2.4a Opp 3) and transport (e.g. materials for electric vehicles, see C2.4a Opp 2). TIME-HORIZONS CONSIDERED Analyses and steering consider short-, medium and long-term impacts on our business objectives.

Supply chain and/or value chain	Yes	INFLUENCE ON STRATEGY Purchase of energy, as part of our supply chain activities, accounts for about 14% of BASF's total Scope 1+2 emissions. Thus, it constitutes a significant strategic lever in our Carbon Management for reducing our emissions exposure in view of climate-related transition risks (e.g. higher costs through carbon regulation; see C2.3a Risk 1). We initiated measures to increase the share of renewable electricity we purchase for our production sites, to support our climate protection target. In 2022, 108 sites were supplied with renewable electricity, some of them fully. Another strategic measure in our supply chain activities refers to the purchase of raw materials. In our Supplier CO2 Management Program, we aim to achieve transparency on product-related CO2 emissions of our purchased raw materials. We offer support and share knowledge on Product Carbon Footprint (PCF) valuation methodologies and tools with our suppliers. In the improvement phase, we will jointly identify levers and targets with our suppliers to reduce GHG emissions. Also, as part of managing transition risks across the value chain, we initiated strategic measures to speed up the transition to a circular economy. We are developing "close the loop" solutions (i.e., turn waste into resources) via external partnerships and pilot projects. Furthermore, we started increasing the resilience of up-/downstream transport against climate-related physical risks at our largest production site in Ludwigshafen (e.g. through alternative transport options, see C2.3a Risk 2). TIME-HORIZONS CONSIDERED Strategic levers bundled under Carbon Management cover short-, medium and long-term activities. Measures focusing on supplier carbon footprints, circular economy and resilience are expected to be effective short- to medium-term.
Investment in R&D	Yes	INFLUENCE ON STRATEGY In order to contribute to the company's purpose "We create chemistry for a sustainable future", BASF derived 3 major areas in which chemistry-based innovations will play a key role in the future: (1) resources, environment & climate; (2) food & nutrition; (3) quality of life. Focus area (1) and associated climate-related risks and opportunities impact the area of R&D investments; BASF has therefore focused

		on and intensified this topic to come up with solutions (C2.4a Opp 1, 2 & 3). We invest a substantial amount of our annual R&D expenditures on product and process innovations where the R&D target is related to energy/resource efficiency and climate protection. Our innovation focus is on developing new products and solutions that help our customers achieve their sustainability goals. By helping them reduce their carbon footprint, use resources more efficiently, or manufacture products in a more environmentally friendly way and recycle them, we ensure our long-term competitiveness and at the same time, play a role in decoupling growth from the consumption of limited resources. The R&D component is also firmly embedded in our Carbon Management to reach our climate protection target and reduce our GHG emissions over the long term. TIME-HORIZONS CONSIDERED The strategic levers bundled under Carbon Management as well as our wider R&D approaches cover short-, medium- as well as long-term activities.
Operations	Yes	INFLUENCE ON STRATEGY BASF operates plants liable to the Emission Trading Schemes, therefore carbon pricing as a regulatory risk has already materialized to some extent and can be expected to become more relevant in future (e.g., implementation of the Chinese national ETS or more stringent EU ETS, see C2.3a Risk 1). Such climate-related transition risks contributed to leveraging climate action within our corporate strategy. We defined a climate protection target and set out various measures in our operations to mitigate transition risks by reducing emissions exposure, especially (1) improve process / energy efficiency (as part of our wider Carbon Management); (2) integrate a carbon price in the assessment of new capital expenditure projects. Furthermore, we started increasing the resilience of operations against climate-related physical risks at our largest production site in Ludwigshafen by initiating a range of adaptation measures (e.g., higher cooling capacity, see C2.3a Risk 2). TIME-HORIZONS CONSIDERED The strategic levers bundled under Carbon Management

		cover short-, medium- as well as long-term activities. Investment projects have a medium- to long-term view. Measures focusing on resilience are expected to be effective short- to medium-term.

C3.4

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

	Financial planning elements that have been influenced	Description of influence
Row 1	Revenues Direct costs Indirect costs Capital expenditures Capital allocation Acquisitions and divestments Access to capital Assets	REVENUES Financial planning regarding revenues needs to consider future contributions from innovations and existing products. Climate-related risks and opportunities are reflected in both aspects: R&D activities at BASF are directed to contribute to the company's purpose "We create chemistry for a sustainable future", and one R&D focus area is "resources, environment and climate". We invest a substantial amount of our annual R&D expenditures (€2.298 billion total R&D expenses in 2022) on product and process innovations where the R&D target is related to energy/resource efficiency and climate protection. This underlines that we expect to generate a significant share of future revenues from solutions in this area. Moreover, our portfolio steering (Sustainable Solution Steering) towards solutions / products in line with our purpose and the societal needs during the transition to a low-carbon economy has contributed positively to our sales recently. Our target of generating €22 billion in Accelerator sales by 2025, which was based on our corporate strategy, was already achieved in 2021 with sales of €24.1 billion. In order to address the growing sustainability requirements in our markets with innovative solutions, we want to align our product portfolio even more strongly with climate protection, climate neutrality and the circular economy. That is why we are updating our methodology and our product portfolio steering target and will introduce a revised method in 2023. Time horizon covered: Revenue streams are primarily assessed for the short- to a medium-term timeframe. DIRECT / INDIRECT COSTS BASF plants in Europe, Korea and China are subject to carbon regulations (i.e., CO2 pricing mechanisms) that increase operating costs. Our financial planning integrates these variable costs in the forecasts of plant performance. We estimate a total burden in the range of €150-350

		million per year (global aggregate view), i.e., a high financial impact considering BASF's system for classification of financial implications. Time horizon covered: Cost implications are assessed for short-, medium- and long-term time periods. Case study direct/indirect costs: Situation: About 52% of our global Scope 1+2 emissions are covered by the EU ETS and have to be backed by the appropriate allowances. The risk of additional costs for these BASF installations results from a lack of free allowances even for the best performers and increasing prices for the certificates during the fourth trading period of the EU ETS. Task: Determine potential future cost burdens for BASF installations regulated under the EU ETS 4th trading period as input to financial planning for these assets. Action: A corporate team evaluates the impact of current and future regulations on the level of free allowances of the installations and estimates the demand for the purchase of certificates, based on future production plans. In combination with projections for the price of EU ETS certificates (resulting from the respective internal scenario analysis), estimates for total cost burdens are derived: under the revised EU ETS Directive with a disproportionate burden between the ETS and non-ETS sector, free allocation of allowances may decrease in the order of about 3 million allowances for BASF. At the same time, ETS certificate prices may trade on significantly higher levels than in past for the remainder of the 4th trading period (2024-2030). Calculating with a range of carbon prices of €75-150, this results in a risk of about €225-450 million per year (conservative estimation approach). Result: The estimated future costs of compliance with the EU ETS (fourth trading period) complement the financial planning for each installation. " CAPEX / CAPITAL ALLOCATION/ACQUISITIONS By 2025, we plan to invest up to €1 billion to achieve our climate protection targets. Additional investments of up to €3 billion are to follow by 2030. BASF has set up a structured process to evaluate investment projects (e.g., capital expenditures, acquisitions), including impacts on the environment (e.g., climate) and respective costs. The process considers a project base case scenario (integrating different technology approaches, if applicable) as well as the option to assess alternative risk scenario cases. Climate-related aspects are attributed to any case depending on strategic goals as well as the expected likelihood and magnitude of impacts. This way, climate-related aspects directly become a complementary component of the evaluation and decision scheme for business cases of investment projects. E.g., business cases for capital expenditures and acquisitions in Europe will include potential costs of European carbon regulation. Different technology options/acquisition models (e.g., varying

		levels of control) within the business case will show varying GHG emission levels and respective carbon costs, which directly impacts the assessment of economic viability for the various options. The process is valid for all major investment projects. The financial impact varies strongly, depending on the nature of the project (e.g., physical conditions at the location of plant(s), level of emissions, regulatory context). The consideration of climate-related aspects can lead to significant additional costs in specific cases. Time horizon covered: Investment projects are typically relevant under medium- to long-term considerations. ACCESS TO CAPITAL BASF has identified risks primarily in the areas of existing and emerging regulation, change of markets, and reputational impacts due to changing investor or customer perspectives. We actively manage these risks (e.g., holding an open dialogue to prevent reputational damage) and currently foresee no substantial impacts by the described risks regarding investor valuation of BASF and our performance in relation to climate change on our access to capital. BASF enjoys good credit ratings, especially compared with competitors in the chemical industry. Moody's most recently confirmed its rating of A3/P-2/outlook stable on January 18, 2023. Standard & Poor's confirmed its rating of A/A-1/outlook negative on December 8, 2022. Fitch maintained its rating of A/F1/outlook stable on November 30, 2022. Time horizon covered: The impact assessments have a focus on short- to medium-term time periods. ASSETS / LIABILITIES BASF has identified risks and opportunities primarily in the areas of existing and emerging regulation, change of markets, and reputational impacts due to changing investor or customer perspectives. None of the assessments of the different risks and opportunities have pointed to impacts triggering the need to factor them into financial planning related to our assets or our liabilities. Rated "A3/P-2/outlook stable" by Moody's and "A/A-1/outlook stable" by Standard and Poor's, BA SF enjoys good credit ratings. Time horizon covered: The impact assessments have a focus on short- to medium-term time periods.

C3.5

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

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

C3.5a

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

Financial Metric

Revenue/Turnover

Type of alignment being reported for this financial metric

Alignment with a sustainable finance taxonomy

Taxonomy under which information is being reported

EU Taxonomy for Sustainable Activities

Objective under which alignment is being reported

Climate change mitigation

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

339,000,000

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

0.4

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

0.4

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

0.4

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

We assessed the taxonomy eligibility of our turnover based on sales as defined and reported in the Consolidated Financial Statements of the BASF Group. Taxonomy-eligible turnover accounted for 13.3% of total sales in 2022. The largest contributions were from the activities "manufacture of plastics in primary form" and "manufacture of organic basic chemicals." Taxonomy-eligible capital expenditures (including acquisitions and excluding goodwill in accordance with the E.U. taxonomy) accounted for 18.6% of the total investments reported in the Consolidated Financial Statements. Capital expenditures on the "manufacture of organic basic chemicals" and in the "manufacture of batteries" made the greatest contribution. Operating expenditures include non-

capitalized costs that relate to research and development, maintenance and repair, and short-term lease expenses. They are not reported in the Consolidated Financial Statements in this form. All of the capital expenditures and operating expenditures of a production facility with a tax-onomy-eligible activity are counted as taxonomy-eligible. Taxonomy-eligible operating expenditures accounted for 10.4% of total operating expenditures. The largest contributions were from the activities “manufacture of organic basic chemicals” and “manufacture of plastics in primary form.”

Although we are striving to increase the percentage of taxonomy eligible sales and expenditure, there is no defined target or KPI yet. That is why we kept the percentage constant in our answer above.

C3.5b

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

Economic activity

Manufacture of organic basic chemicals

Taxonomy under which information is being reported

EU Taxonomy for Sustainable Activities

Taxonomy Alignment

Taxonomy-aligned

Financial metric(s)

Turnover
CAPEX
OPEX

Taxonomy-aligned turnover from this activity in the reporting year (unit currency as selected in C0.4)

249,000,000

Taxonomy-aligned turnover from this activity as % of total turnover in the reporting year

0.1

Taxonomy-aligned turnover from this activity that substantially contributed to climate change mitigation as a % of total turnover in the reporting year

100

Taxonomy-aligned turnover from this activity that substantially contributed to climate change adaptation as a % of total turnover in the reporting year

0

Taxonomy-eligible but not aligned turnover from this activity in the reporting year (unit currency as selected in C0.4)

Taxonomy-eligible but not aligned turnover from this activity as % of total turnover in the reporting year

Taxonomy-aligned CAPEX from this activity in the reporting year (unit currency as selected in C0.4)

378,000,000

Taxonomy-aligned CAPEX from this activity as % of total CAPEX in the reporting year

7.6

Taxonomy-aligned CAPEX from this activity that substantially contributed to climate change mitigation as a % of total CAPEX in the reporting year

100

Taxonomy-aligned CAPEX from this activity that substantially contributed to climate change adaptation as a % of total CAPEX in the reporting year

0

Taxonomy-eligible but not aligned CAPEX associated with this activity in the reporting year (unit currency as selected in C0.4)

Taxonomy-eligible but not aligned CAPEX associated with this activity as % of total CAPEX in the reporting year

Taxonomy-aligned OPEX from this activity in the reporting year (unit currency as selected in C0.4)

15,000,000

Taxonomy-aligned OPEX from this activity as % of total OPEX in the reporting year

0.3

Taxonomy-aligned OPEX from this activity that substantially contributed to climate change mitigation as a % of total OPEX in the reporting year

100

Taxonomy-aligned OPEX from this activity that substantially contributed to climate change adaptation as a % of total OPEX in the reporting year

0

Taxonomy-eligible but not aligned OPEX associated with this activity in the reporting year (unit currency as selected in C0.4)

Taxonomy-eligible but not aligned OPEX associated with this activity as % total OPEX in the reporting year

Type(s) of substantial contribution

Own performance
Transitional activity
Activity enabling mitigation

Calculation methodology and supporting information

The taxonomy-eligible activities identified by BASF can be classified as taxonomy-aligned if they make a substantial contribution to climate change mitigation and do no significant harm to other environmental objectives and, at the same time, ensure minimum social safeguards. The contribution to climate change mitigation and harm to other environmental objectives were reviewed in a three-step process.

The first step involved a two-part analysis based on BASF's internal product databases: The manufacture of products is analyzed with respect to the use of critical substances in accordance with Annex C1 of the E.U. Commission's Delegated Regulation 2021/2139 to ensuresignificant pollution prevention or control according to the E.U. taxonomy. This also includes use in the production process. An assessment of the "essential use" of the critical substances used in the sense of the opening clauses according to Annex C, letters f) and g) has not been performed. The E.U. Commission announced further regulations on this in 2023.

Technical screening criteria met

Yes

Details of technical screening criteria analysis

Do no significant harm requirements met

Yes

Details of do no significant harm analysis

It was assessed whether the products identified cause significant harm to the other environmental objectives. This included an analysis of risks arising from climate change using climate risk and vulnerability assessments. At sites with material climate risk, the existence of adaptation solutions was additionally analyzed and evaluated. The avoidance of significant harm to water and marine resources, biodiversity and ecosystems, and pollution prevention and control were taken as given for production plants in Europe based on comprehensive and uniform regulatory requirements and additionally ensured through data queries.

The conformity of non-European plants was assessed on a case-by-case basis. This

was based on joint assessments by local and central experts using the evidence of local production requirements submitted.
The manufacture of products is analyzed with respect to the use of critical substances in accordance with Annex C1 of the E.U. Commission's Delegated Regulation 2021/2139 to ensure significant pollution prevention or control according to the E.U. taxonomy. This also includes use in the production process. An assessment of the "essential use" of the critical substances used in the sense of the opening clauses according to Annex C, letters f) and g) has not been performed. The E.U. Commission announced further regulations on this in 2023.

Minimum safeguards compliance requirements met

Yes

Details of minimum safeguards compliance analysis

Minimum social safeguards are to be ensured by a systematic, integrated and risk-based approach to safeguarding our human rights due diligence obligations, by global labor and social standards, and by the Supplier Code of Conduct, among other things.

C3.5c

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

The EU Taxonomy reporting is part of the non financial disclosure and audited by our external Auditor KPMG (limited assurance).

C4. Targets and performance

C4.1

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

Absolute target

C4.1a

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

Target reference number

Abs 1

Is this a science-based target?

No, but we anticipate setting one in the next two years

Target ambition

Year target was set
2018

Target coverage
Company-wide

Scope(s)
Scope 1
Scope 2

Scope 2 accounting method
Market-based

Scope 3 category(ies)

Base year
2018

Base year Scope 1 emissions covered by target (metric tons CO2e)
17,820,000

Base year Scope 2 emissions covered by target (metric tons CO2e)
4,067,000

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

21,887,000

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

96

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

100

Base year Scope 3, Category 1: Purchased goods and services emissions covered by target as % of total base year emissions in Scope 3, Category 1: Purchased goods and services (metric tons CO2e)

Base year Scope 3, Category 2: Capital goods emissions covered by target as % of total base year emissions in Scope 3, Category 2: Capital goods (metric tons CO2e)

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

Base year Scope 3, Category 4: Upstream transportation and distribution covered by target as % of total base year emissions in Scope 3, Category 4: Upstream transportation and distribution (metric tons CO2e)

Base year Scope 3, Category 5: Waste generated in operations emissions covered by target as % of total base year emissions in Scope 3, Category 5: Waste generated in operations (metric tons CO2e)

Base year Scope 3, Category 6: Business travel emissions covered by target as % of total base year emissions in Scope 3, Category 6: Business travel (metric tons CO2e)

Base year Scope 3, Category 7: Employee commuting covered by target as % of total base year emissions in Scope 3, Category 7: Employee commuting (metric tons CO2e)

Base year Scope 3, Category 8: Upstream leased assets emissions covered by target as % of total base year emissions in Scope 3, Category 8: Upstream leased assets (metric tons CO2e)

Base year Scope 3, Category 9: Downstream transportation and distribution emissions covered by target as % of total base year emissions in Scope 3, Category 9: Downstream transportation and distribution (metric tons CO2e)

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

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

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

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

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

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

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

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

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

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

97

Target year

2030

Targeted reduction from base year (%)

25

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

16,415,250

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

15,797

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

2,629

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

18,426

Does this target cover any land-related emissions?

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

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

399.6632521588

Target status in reporting year

Underway

Please explain target coverage and identify any exclusions

Compared with the baseline in 2018, we want to reduce greenhouse gas emissions from our production sites (excluding emissions from the sale of energy to third parties) and our energy purchases by 25% by 2030. The target applies to our main business as a chemical company, accounting for 97% of total emissions in the base year. We excluded a small share of emissions related to the generation of steam and electricity for sale to third parties (3% of total emissions in the base year), which are not part of our core business activities and partly even driven by external factors (e.g. supply regulations in the power sector). Note that this target is a combined one for Scope 1 and Scope 2 Emissions: the sum of both is to be reduced by 25%, not necessarily for each individual contributor.

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

We were able to reduce emissions by 15.8% in the reporting year compared to the baseline. 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 (biobased feedstocks lever), and ongoing measures to further increase energy and resource efficiency in our production (continuous opex lever).

In 2022, we have established organizational structures to implement our climate protection targets and carbon management activities with even greater focus and speed: The Environmental Protection, Health, Safety and Quality unit in the Corporate Center develops Group-wide guidelines and requirements for collecting emissions and energy data and for energy management. It conducts regular audits to monitor the implementation of and compliance with internal guidelines and legal requirements by our sites and Group companies. The Corporate Strategy & Sustainability unit develops and tracks the BASF Group's climate targets and strategic levers for achieving them based on our corporate carbon footprint. The Net Zero Accelerator unit, which was established in early 2022, focuses on the accelerated implementation of existing and new cross-divisional projects to reduce emissions. The emphasis is on carbon-free and low-carbon production technologies, the circular economy, and renewable energies. Both Corporate Strategy & Sustainability and Net Zero Accelerator report to the Chairman of the Board of Executive Directors. This integrates climate protection-relevant aspects into strategic decision-making processes and core business activities.

The reduction achieved in 2022 partly is due to a much lower production volume and thus lower process emissions, energy use, and electricity and steam production. Still, BASF increased the number of sites partly or fully supplied with renewable energy from

88 in 2021 to 108 sites in 202 and implemented over 300 energy efficiency measures that contributed to Scope 1 and Scope 2 reductions.

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

C4.2

(C4.2) Did you have any other climate-related targets that were active in the reporting year?

Net-zero target(s)

C4.2c

(C4.2c) Provide details of your net-zero target(s).

Target reference number

NZ1

Target coverage

Company-wide

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

Abs1

Target year for achieving net zero

2050

Is this a science-based target?

No, but we anticipate setting one in the next two years

Please explain target coverage and identify any exclusions

The target applies to Scope 1 and Scope 2 (market-based) and our main business as a chemical company, accounting for 97% of total emissions under Scope 1+2 in the base year 2018. We excluded a small share of emissions related to the generation of steam and electricity for sale to third parties (3% of total emissions in the base year), which are not part of our core business activities and partly even driven by external factors (e.g. supply regulations in the power sector).

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

Yes

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

We have not planned near-term investments or milestones related to neutralization at target year.

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

We have not planned specific actions to mitigate emissions beyond our value chains in relation to our net zero target.

C4.3

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

Yes

C4.3a

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

	Number of initiatives	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	104	
To be implemented*	332	176,000
Implementation commenced*	224	125,000
Implemented*	519	282,000
Not to be implemented	68	

C4.3b

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

Initiative category & Initiative type

Energy efficiency in production processes
Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)

80,000

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

Scope 1
Scope 2 (location-based)
Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

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

23,068,000

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

19,953,000

Payback period

<1 year

Estimated lifetime of the initiative

Ongoing

Comment

In 2022, our production sites have implemented 312 measures worldwide that result in savings of fuel, electricity, steam, cooling water etc.

At the Chongqing site in China, for example, modifications to the wastewater treatment process reduced heat demand and the resulting emissions by more than 2,500 metric tons of CO2 per year. At a plant at the Kuantan site in Malaysia, an optimized control system allowed existing flash steam to be fully utilized, reducing additional steam demand. This enables an emissions reduction of over 1,500 metric tons of CO2 per year. At the Ludwigshafen site in Germany, the innovative design of a new residue incineration line enables the more efficient use of combustion heat to produce steam. This avoids more than 5,000 metric tons of CO2 emissions every year.

Since many projects benefit from a combination of different activities highlighted by CDP (e.g. heat recovery, cooling technology) and belong to the same overarching internal program, we decided to represent them jointly under “Process optimization”.

Initiative category & Initiative type

Low-carbon energy consumption

Other, please specify

Green energy procurement based on mix of wind, hydro and solar power

Estimated annual CO2e savings (metric tonnes CO2e)

152,000

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

Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

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

0

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

0

Payback period

No payback

Estimated lifetime of the initiative

Ongoing

Comment

The CO2 savings resulted from new green electricity sourcing in 2022 for dedicated sites in China and Europe and whole South America region.

Initiative category & Initiative type

Waste reduction and material circularity
Waste reduction

Estimated annual CO2e savings (metric tonnes CO2e)

11,000

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

Scope 1
Scope 3: Other (downstream)

Voluntary/Mandatory

Voluntary

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

11,753,000

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

8,287,000

Payback period

<1 year

Estimated lifetime of the initiative

Ongoing

Comment

In 2022 we were able to implement 92 measures with a focus on waste reduction at sites worldwide.

The focus of the implementations was on process optimizations with respect to enhanced material recycling und thus waste savings. This has been achieved e.g. at one plant at Ludwigshafen site via process control system modifications resulting in better selectivity and thus less unwanted by-products to be incinerated with more than 2,000 tons CO2 emission avoidance. Or at a resin plant in China by a double distillation column to recycle an organic compound which has otherwise to be treated as waste and thus also reduced CO2 emissions by around 2,000 tons. At an Italian site the external waste disposal has been reduced by increased incineration of organic residues on site along with reduced natural gas consumption in a thermal oxidizer, possible after the DeNox unit substitution.

Initiative category & Initiative type

Other, please specify

Other, please specify

Material reduction - Material consumption reduction in terms of a reduction of raw material demand by increasing material efficiency of processes

Estimated annual CO2e savings (metric tonnes CO2e)

39,000

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

Scope 3 category 1: Purchased goods & services

Voluntary/Mandatory

Voluntary

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

28,159,000

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

13,351,000

Payback period

<1 year

Estimated lifetime of the initiative

Ongoing

Comment

In 2022 we were able to implement 114 measures in order to reduce raw material consumption. Focus was on process optimization with regards to yield improvement. Examples are higher selectivity and separation efficiencies achieved with improved dosing systems and products at an US and an Antwerp plant, resulting in CO2 savings of about 4,000 t/year each.

C4.3c

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

Method	Comment
Compliance with regulatory requirements/standards	We invest a substantial fraction of our annual R&D expenditures (€2.3 billion total R&D expenses in 2022) on product and process innovations where the R&D target is related to energy/resource efficiency and climate protection. As part of our Carbon Management R&D Program, we are carrying out intensive research into pioneering, low-carbon production processes for basic chemicals such as hydrogen. In a research project on an alternative production method

	for sodium acrylate, we are investigating the use of CO2 as a chemical feedstock.
Partnering with governments on technology development	BASF is involved in several government-sponsored R&D initiatives on new technology development. For example, we are developing an innovative, climate-friendly production process for hydrogen (methane pyrolysis) together with partners from academia and industry in a joint project sponsored by the German Federal Ministry of Education and Research. Our investment and research activities in Schwarzheide Germany, for battery recycling, cathode material production and production of black mass from batteries receive funding from the German Federal Ministry for Economic Affairs and Climate Action and the Ministry for Economic Affairs, Labor and Energy of the German state of Brandenburg under the IPCEI on Batteries (funding code 16BZF101A/B).
Internal price on carbon	Carbon pricing plays a role in internal assessments of capital investments and operational costs of our production facilities, the rationale being that costs originating from respective pricing schemes have an impact on the return on investment and cost-benefit ratio of operations. The price of carbon considered depends on various factors driven by the specific assessment, e.g., geography and timeframe of an investment. Sometimes, several pricing scenarios are used to evaluate uncertainties in future regulatory environments.
Internal incentives/recognition programs	Employees with core responsibilities concerning energy and climate protection sign individual target agreements relating to emission reduction activities. The BASF compensation system links their bonus to the achievement of these individual targets. Every employee can engage in the employee suggestion scheme and bring forward ideas on emission reductions and will be rewarded financially if the idea is implemented. From June to November 2022 there was a special focus on ideas to avoid CO2 emissions. Our idea management provided a CO2 savings app, for a first assessment by the employee coming up with a certain idea. Prizes with a link to sustainability were awarded, e.g., solar panels or a cargo bike.
Employee engagement	To enhance the awareness of employees and to realize emission reductions that are mainly based on behavioral changes, employee engagement programs are conducted, e.g., through brochures on how to increase the energy efficiency at the office, a specific employee suggestion scheme targeted at climate protection, specific employee events or an awareness campaign within the EMEA region (“Join in and become a Net Zero Hero”) This campaign was prepared in 2022, but rolled out in 2023.
Compliance with regulatory requirements/standards	BASF complies with the regulatory requirements resulting from emission trading systems, e.g., in the EU, China, and South Korea. Moreover, compliance with air quality regulations can have an impact on the emission of GHGs. Our plants comply with these regulatory

	requirements. Additionally, regulations in many countries require a certain standard for the energy efficiency of new buildings. This is the minimum standard that is met if a new building is planned by BASF.
Dedicated budget for other emissions reduction activities	We have set up a dedicated budget for operational excellence measures, which covers measures to increase energy and resource efficiency as well as certain other emission reductions (e.g., abatement technology) in operations. Efficiency measures below a certain investment threshold delivering savings in steam, electricity, fuel or other contributions to CO2 savings are funded even if their payback time exceeds the general expectations in order to foster the OpEx lever within our net zero transformation.
Other Setting of corporate goals	By setting ambitious corporate goals a process is initiated that ensures that measures relying on respective investments are implemented to reach these goals.
Dedicated budget for energy efficiency	We have set up a dedicated budget for operational excellence measures, which covers measures to increase energy and resource efficiency as well as certain other emission reductions (e.g., abatement technology) in operations. Efficiency measures below a certain investment threshold delivering savings in steam, electricity, fuel or other contributions to CO2 savings are funded even if their payback time exceeds the general expectations in order to foster the OpEx lever within our net zero transformation.

C4.5

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

Yes

C4.5a

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

Level of aggregation

Group of products or services

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

The EU Taxonomy for environmentally sustainable economic activities

Type of product(s) or service(s)

Chemicals and plastics

Other, please specify

Manufacture of energy efficiency equipment for buildings

Description of product(s) or service(s)

Our products that help to reduce emissions by increasing energy efficiency of buildings are summarized under ‘Manufacture of energy efficiency equipment for buildings”, representing one part of our climate protection products. Data on revenue generated in this table refer to revenues with EU-taxonomy eligible and aligned energy efficiency equipment for buildings only (not all our climate protection products). The fraction for all our climate protection products would be much larger.
In the past we assessed climate protection products with our Sustainable Solution Steering method for our target of accelerator product sales. This target was reached in 2021 and we are transitioning to a new portfolio segmentation approach. For this reason, we are currently unable to publish a sales figure for all our climate protection relevant products, knowing they will probably a very significant share of our sales (22% in 2021).

We only showcase our methodology of calculating avoided GHG emissions based on lifecycle analysis in the following columns by using BASF's expandable polystyrene granulates (EPS) Styropor® and Neopor® as representative examples of our climate protection portfolio and energy efficiency equipment for buildings. EPS are used to insulate buildings and help to save heating energy and reduce carbon emissions. Neopor® contains particles of graphite. This enables the production of insulation boards with up to 20% better insulation performance than conventional EPS.

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

Yes

Methodology used to calculate avoided emissions

Addressing the Avoided Emissions Challenge- Chemicals sector

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

Cradle-to-grave

Functional unit used

Heating a newly insulated existing single-family detached house in Germany at an average room temperature of 19°C for 40 years (net energy demand 10,018 kWh/a)

Reference product/service or baseline scenario used

Heating an existing single-family detached house in Germany at an average room temperature of 19°C for 40 years (net energy demand 20,875 kWh/a)

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

Cradle-to-grave

Estimated avoided emissions (metric tons CO2e per functional unit) compared to reference product/service or baseline scenario

141

Explain your calculation of avoided emissions, including any assumptions

We conducted an attributional LCA study based on ISO 14040:2006 and ISO 14044:2006 that includes all material and energy inputs and outputs from raw materials acquisition through production, use, and disposal (cradle-to-grave analysis). The study focuses on the wall insulation of an existing house by using an External Thermal Insulation Composite System (ETICS) based on expanded polystyrene (EPS). The study compares two alternatives for an existing detached house in Germany: one in which the house is left as representing the weighted average of non-refurbished and already refurbished houses, and one in which the façade is refurbished to current German standards using an External Thermal Insulation Composite System based on expanded polystyrene. The dimensions and geometry of the house including the number and size of windows were chosen to represent a typical single-family detached house in Germany built in the 1960s. The thickness of the insulation board and the heating demand of the house were calculated based on monthly energy balances by energy experts using software to simulate the thermal behavior of the representative house.

The applied reference flows are:
(1) The newly insulated house with 198 m2 of an External Thermal Insulation Composite System with an EPS Board (WLG 035 (lambda = 0.035 W/(m*K), density 20 kg/m3) with a thickness of 14 cm achieving a U-value (wall) of 0.2 W/(m2*K) and a net heating energy demand of 10,018 kWh/a
(2) The house left as is with a net heating energy demand of 20,875 kWh/a.

In this study, the simplified calculation method was used. This means that the production and disposal phases of the study do not consider the entire house, but only the differences between the two alternatives. These are the production and the installation of the ETIC System and the disposal of the insulation system at the end of its defined service life. GWP factors from the IPCC 5th AR were used. No allocation was needed in the documented input data.

Results: The results of the study demonstrate the environmental benefits of wall insulation in particular with regard to the reduction of GHG emissions. The newly insulated house has a significantly lower carbon footprint as the house left as is, with about 141 tons of avoided greenhouse gas emissions. The GHG emissions are dominated by the use phase, i.e., the heating energy demand of the house and the service life.

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

0.1

C5. Emissions methodology

C5.1

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

No

C5.1a

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

Row 1

Has there been a structural change?

Yes, a divestment

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

No activities were acquired in 2022.

• Sale of production site in Quincy, Florida, and the associated attapulgite business in the Dispersions & Resins division to Clariant Corporation, Louisville, Kentucky.

• Sale of Kaolin business to KaMin.

Details of structural change(s), including completion dates

• On October 31, 2022, BASF completed the sale of its production site in Quincy, Florida, and the associated attapulgite business in the Dispersions & Resins division to Clariant Corporation, Louisville, Kentucky. The Quincy site employed around 75 employees and manufactures clay-based mineral products used in a variety of industrial applications. The purchase price was $60 million.

• On September 30, 2022, BASF closed the divestiture of its kaolin minerals business to KaMin, a global performance minerals company headquartered in Macon, Georgia, following approval by the relevant authorities. The divestiture comprised the production hub with sites in Daveyville, Toddville, Edgar, Gordon, and related mines, reserves, and mills in Toomsboro and Sandersville in Georgia. The refinery catalysts production located at the same site remained part of BASF operations and was not included in the divestiture. The kaolin minerals business was allocated to the Performance Chemicals division.

C5.1b

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

	Change(s) in methodology, boundary, and/or reporting year definition?
Row 1	No

C5.1c

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

	Base year recalculation	Base year emissions recalculation policy, including significance threshold	Past years' recalculation
Row 1	No, because the impact does not meet our significance threshold	A pre-condition for a recalculation is a thorough impact assessment. If the impact assessment indicates a change of the baseline by ≥5% due to significant structural changes of BASF (e.g. mergers, acquisitions, divestments), major changes to the calculation methodology / accounting approach (e.g. revision of the GHG Protocol, switches in datasets for emission factors), or identification of existing but not yet assessed emissions, the Board of Directors shall be requested for approval of the recalculation of the baseline. The changes reported in C5.1a didn't meet the threshold: a) total annual emissions associated with the acquisitions and divestitures were minor Scope 1+2 emissions of 70,000 t of CO2 in 2022, equivalent to less than 0.4% of total BASF emissions of that year. b) the changes occurred mid-year and thus did not even affect the whole year.	No

C5.2

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

Scope 1

Base year start

January 1, 2018

Base year end

December 31, 2018

Base year emissions (metric tons CO2e)

18,593,000

Comment

Scope 2 (location-based)

Base year start

January 1, 2018

Base year end

December 31, 2018

Base year emissions (metric tons CO2e)

3,747,000

Comment

Scope 2 (market-based)

Base year start
January 1, 2018

Base year end
December 31, 2018

Base year emissions (metric tons CO2e)
4,067,000

Comment

Scope 3 category 1: Purchased goods and services

Base year start
January 1, 2018

Base year end
December 31, 2018

Base year emissions (metric tons CO2e)
48,550,000

Comment

Scope 3 category 2: Capital goods

Base year start
January 1, 2018

Base year end
December 31, 2018

Base year emissions (metric tons CO2e)
1,900,000

Comment

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

Base year start
January 1, 2018

Base year end
December 31, 2018

Base year emissions (metric tons CO2e)
2,906,000

Comment

Scope 3 category 4: Upstream transportation and distribution

Base year start
January 1, 2018

Base year end
December 31, 2018

Base year emissions (metric tons CO2e)
1,937,000

Comment

Scope 3 category 5: Waste generated in operations

Base year start
January 1, 2018

Base year end
December 31, 2018

Base year emissions (metric tons CO2e)
717,000

Comment

Scope 3 category 6: Business travel

Base year start
January 1, 2018

Base year end
December 31, 2018

Base year emissions (metric tons CO2e)
211,000

Comment

Scope 3 category 7: Employee commuting

Base year start
January 1, 2018

Base year end
December 31, 2018

Base year emissions (metric tons CO2e)
236,000

Comment

Scope 3 category 8: Upstream leased assets

Base year start
January 1, 2018

Base year end
December 31, 2018

Base year emissions (metric tons CO2e)
270,000

Comment

Scope 3 category 9: Downstream transportation and distribution

Base year start
January 1, 2018

Base year end
December 31, 2018

Base year emissions (metric tons CO2e)
1,817,000

Comment

Scope 3 category 10: Processing of sold products

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

BASF does not calculate and report GHG emissions from processing of sold products, as these emissions were identified as not being relevant to BASF. This is the result of a thorough analysis and balancing of the different relevance criteria for Scope 3 emissions sources and the five accounting and reporting principles of the GHG Protocol standards by WRI and WBCSD. BASF produces a large variety of intermediate goods. This application diversity cannot be tracked reasonably, and reliable figures on a yearly basis are virtually impossible to obtain. These circumstances strongly compromise the reporting principles completeness, consistency and accuracy (and feasibility), thereby not serving our business goal of reducing GHG emissions along the value chain. In addition, the WBCSD Chemical Sector Standard “Guidance for Accounting & Reporting Corporate GHG Emissions in the Chemical Sector Value Chain” emphasizes that “chemical companies are not required to report Scope 3, category 10 emissions, since reliable figures are difficult to obtain, due to the diverse application and customer structure”.

Scope 3 category 11: Use of sold products

Base year start

January 1, 2018

Base year end

December 31, 2018

Base year emissions (metric tons CO2e)

41,509,000

Comment

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

Base year start

January 1, 2018

Base year end

December 31, 2018

Base year emissions (metric tons CO2e)

15,954,000

Comment

Scope 3 category 13: Downstream leased assets

Base year start

January 1, 2018

Base year end

December 31, 2018

Base year emissions (metric tons CO2e)

100,000

Comment

Scope 3 category 14: Franchises

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Not relevant as BASF does not own or operate franchises.

Scope 3 category 15: Investments

Base year start

January 1, 2018

Base year end

December 31, 2018

Base year emissions (metric tons CO2e)

1,858,000

Comment

Scope 3: Other (upstream)

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3: Other (downstream)

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

C5.3

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

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

C6. Emissions data

C6.1

(C6.1) What were your organization's gross global Scope 1 emissions in metric tons CO2e?

Reporting year

Gross global Scope 1 emissions (metric tons CO2e)

16,555,000

Comment

Emissions of N2O, CH4 and HFC have been translated into CO2 emissions using the Global Warming Potential, or GWP, factor. GWP factors are based on the Intergovernmental Panel on Climate Change (IPCC) 2007, errata table 2012 for the 2018-2020 reporting years, and IPCC 2014 for the 2021 and 2022 reporting years. HFC (hydrofluorocarbons) are calculated using the GWP factors of the individual components. Gross Scope 1 Emissions decreased by 11.3 % compared to 2021.

C6.2

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

Row 1

Scope 2, location-based

We are reporting a Scope 2, location-based figure

Scope 2, market-based

We are reporting a Scope 2, market-based figure

Comment

No changes in reporting method compared to previous years.

C6.3

(C6.3) What were your organization's gross global Scope 2 emissions in metric tons CO2e?

Reporting year

Scope 2, location-based

3,558,000

Scope 2, market-based (if applicable)

2,629,000

Comment

Scope-2-emissions increased by 6.7 % compared to 2021, although the share of renewable electricity was kept constant (16% of total electricity supply). All in all, less energy was bought due to decreased production activities and thus also less renewable electricity.

C6.4

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

Yes

C6.4a

(C6.4a) Provide details of the sources of Scope 1, Scope 2, or Scope 3 emissions that are within your selected reporting boundary which are not included in your disclosure.

Source of excluded emissions

GHG emissions from mobile combustion

Scope(s) or Scope 3 category(ies)

Scope 1

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

Relevance of Scope 1 emissions from this source

Emissions are not relevant

Relevance of location-based Scope 2 emissions from this source

Relevance of market-based Scope 2 emissions from this source

Relevance of Scope 3 emissions from this source

Emissions are not relevant

Date of completion of acquisition or merger

Estimated percentage of total Scope 1+2 emissions this excluded source represents

0

Estimated percentage of total Scope 3 emissions this excluded source represents

0

Explain why this source is excluded

We do not report CO2 emissions from mobile combustion since their contribution to BASF's total GHG emissions is not significant (less than 0.1 % of BASF's total GHG emissions). This is far less than our 5% materiality threshold.

Explain how you estimated the percentage of emissions this excluded source represents

Emissions from mobile combustion comprise emissions from our own assets (as opposed to vehicles we lease, accounted in scope 3). We estimate that we own 2000 cars, on average running 10000 km per year and emitting 150 g of CO2 per km. We estimate that we own 100 trucks / tractors, on average running 1000 km per year and emitting 500 g of CO2 per km. This results in a total of 350 tCO2, which represents 0,0018% of our combined Scope 1 and 2 emissions (including energy sales to third parties).

Source of excluded emissions

CO2 emissions from administrative sites/offices (e.g. sales offices)

Scope(s) or Scope 3 category(ies)

Scope 1
Scope 2 (location-based)
Scope 2 (market-based)
Scope 3: Fuel and energy-related activities (not included in Scopes 1 or 2)

Relevance of Scope 1 emissions from this source

Emissions are not relevant

Relevance of location-based Scope 2 emissions from this source

Emissions are not relevant

Relevance of market-based Scope 2 emissions from this source

Emissions are not relevant

Relevance of Scope 3 emissions from this source

Emissions are not relevant

Date of completion of acquisition or merger

Estimated percentage of total Scope 1+2 emissions this excluded source represents

0.2

Estimated percentage of total Scope 3 emissions this excluded source represents

0

Explain why this source is excluded

BASF reports GHG emissions only for its production facilities. GHG emission data from other facilities such as sales offices are not collected since their contribution to BASF's total GHG emissions was calculated to be less than 1%, which is under our materiality threshold of 5%. We periodically reassess the contribution from our administrative sites. GHG emissions from assets leased by BASF are accounted for as Scope 3 emissions.

Explain how you estimated the percentage of emissions this excluded source represents

We estimate the carbon intensity of office buildings we own at 0.08 tCO2 per m² per year (from electricity and heating). The total area occupied by these buildings is about 0.5 million m². This results in a total of 0.04 million tCO2 per year which represents ~0.2% of our Scope 1 and 2 emissions combined. The corresponding scope 3 emissions (category 3) represent significantly less than 0.1% of our total Scope 3.

C6.5

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

Purchased goods and services

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

50,833,000

Emissions calculation methodology

Average data method

Spend-based method

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

0

Please explain

(i) Activity data: Quantity and monetary purchasing volume of the goods and services purchased in the reporting year were obtained from BASF internal business data management systems. (ii) Emissions factors: Cradle-to-gate emissions factors were obtained from commercially and publicly available data sources such as GaBi (sphera), ecoinvent and PlasticsEurope as well as from BASF's own LCA database, which is based mainly on primary data. Supply chain emission factors for technical goods and services were obtained from the 2014 Guidelines to DEFRA/DECC's GHG Conversion Factors for Company Reporting, Annex 13. (iii) GWP values: GWP values referring to the time horizon of 100 years were taken from IPCC, AR6, 2021. (iv) Methodology & assumptions: We analyzed the GHG emissions of our procured raw materials and precursor manufacturing at BASF's suppliers' facilities (including merchandise) by calculating the cradle-to-gate emissions, including all direct GHG emissions from raw material extraction, precursor manufacturing and transport, as well as indirect emissions from energy use. To do so, we determined the quantity of each single product purchased, and then applied emission factors for about 80 percent of the purchased products (by weight). If country-specific emission factors were available, a weighted product carbon footprint was calculated to reflect the percentage of the regional distribution of the purchased material. We multiplied the CO2e emissions per kilogram of each product by the respective quantity of the product purchased to determine cradle-to-gate emissions. Finally, the resulting Scope 3 emissions were extrapolated to 100% of the total purchasing volume to account for all procured raw materials and precursors. For calculating the emissions from packaging, we first determined the material compositions of the different packaging groups such as HDPE or steel drums. Then, we calculated GHG emissions by multiplying the number of purchased items of packaging by their respective cradle-to-gate emission factors. The GHG emissions from technical goods and services were assessed based on the monetary purchasing volume in the reporting year by multiplying the amount of spending (with inflation adjustment and considering VAT) by the GHG conversion factors from the Defra 2014 Guidelines.

Capital goods

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

1,550,000

Emissions calculation methodology

Average spend-based method

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

0

Please explain

(i) Activity data: Monetary purchasing volumes of capital goods purchased in the reporting year were obtained from BASF internal business data management systems.

(ii) Emissions factors: Supply chain emission factors for spending on capital goods were obtained from the 2014 Guidelines to DEFRA/DECC's GHG Conversion Factors for Company Reporting, Annex 13 (Indirect emissions from supply chain). (iii) GWP values: GWP values as used by DEFRA to calculate the GHG conversion factors in Annex 13 (2014). (iv) Methodology & assumptions: The GHG emissions that are associated with BASF's capital goods purchased in the reporting year were estimated based on the following approach: All sub-segments of BASF's global Technical Procurement related to the sourcing of capital equipment such as machinery and fabricated equipment were analyzed based on their monetary purchasing volume in the reporting year. Each sub-segment was assigned a corresponding SIC code because the DEFRA conversion factors for greenhouse gas emissions are based on the standard classification system (SIC 2007). The amount of spending (with inflation adjustment and considering VAT) was then multiplied by the respective GHG conversion factor and subsequently added up to the total GHG emissions from capital goods.

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

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

2,070,000

Emissions calculation methodology

Average data method

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

0

Please explain

(i) Activity data: The quantities of fuel and energy, i.e., electricity and steam purchased in the reporting year were obtained from BASF internal business data management systems. (ii) Emissions factors: The cradle-to-gate emissions factors were obtained from the GaBi database. The grid-related loss factor was taken from IEA, Electricity Statistics (most recent year available). (iii) GWP values: GWP values referring to the time horizon of 100 years were taken from IPCC, AR6, 2021. (iv) Methodology & assumptions: The GHG emissions from the extraction, production and transportation of fossil fuels used for power and steam generation in our own (power) plants were determined by multiplying the amount of purchased fuels by their respective, region-specific cradle-to-gate CO2e emission factors. The GHG emissions from the extraction, production and transportation of fuels consumed in the generation of electricity and steam purchased by BASF in the reporting year were calculated as follows: The amount of primary energy was determined based on the amount of purchased electricity and steam and the respective fuel efficiencies (83% for steam generation; 37% for electricity generation). The share of the different fuel types of the total amount of primary energy was then calculated for each region based on the fuel shares of electricity generation (IEA, Electricity Statistics; most recent year available). The fuel shares were then multiplied by the respective region-specific CO2e emission factors to result in the overall CO2e emissions.

Generation of electricity, steam, heating and cooling that is consumed in a T&D system: GHG emissions associated with losses of purchased electricity and steam were estimated based on our location-based Scope 2 emissions in the reporting year and a grid-related loss factor. Losses associated with our own T&D system due to our own generation of electricity and steam are already accounted for in our Scope 1 emissions which are based on fuel input. Generation of electricity and steam that is purchased by the reporting company and sold to end users is not applicable to BASF.

Upstream transportation and distribution

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

2,054,000

Emissions calculation methodology

Distance-based method

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

0

Please explain

(i) Activity data: Quantities, types of goods and regional split of purchase in the reporting year as well as origin and destination points, mode of transport and load factors were obtained from BASF internal business data management systems. (ii) Emissions factors: The CO2 emission factors used were taken from the GLEC Framework. For quantification of the GHG emissions from BASF's internal transports the emission factors incorporated in the IT solution EcoTransIT World were used (//www.ecotransit.org/). (iii) GWP values: GWP values as used by GLEC and EcoTransIT, respectively. (iv) Methodology & assumptions: GHG emissions associated with the transport of raw materials purchased by BASF in the reporting year were calculated by multiplying the quantities of products procured by a transportation distance and by an emissions factor for the mode of transport. For large-volume raw materials (make up more than 50% of the purchasing volume), the mode of transport and the transport distance were determined substance specifically. For the remaining raw materials transportation distances for each region were estimated by logistics experts. For procured products in Europe, the modal split from a Cefic survey for chemical transports was used; for all other regions only truck transport was assumed. The GHG emissions from BASF internal transports were calculated based on detailed transportation data using the IT solution EcoTransIT World. GHG emissions associated with the transportation of technical & capital goods purchased by BASF were calculated based on an estimated weight for capital and technical goods derived from the monetary purchasing volume and an assumed material content. Weight of purchased packaging was calculated based on material composition. Only truck transportation and an average transportation distance of 500 km (1,000 km in USA) were assumed for the transport of technical goods.

Waste generated in operations

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

1,185,000

Emissions calculation methodology

Average data method

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

0

Please explain

(i) Activity data: The quantities of solid waste and wastewater generated during production at all BASF production sites were obtained from BASF's in-house Reporting EHS Application database. The data collection method differentiates between on-site and off-site disposal as well as between different disposal methods (waste incineration with and without energy recovery, landfill, wastewater treatment and others). (ii) Emissions factors: The emissions factors were obtained from the GaBi database. (iii) GWP values: GWP values referring to the time horizon of 100 years were taken from IPCC, AR6, 2021. (iv) Methodology & assumptions: The GHG emissions from on-site waste incineration, landfill and physical recovery are accounted for in our Scope 1 emissions. The off-site physical recovery (recycling) of waste is assigned zero emissions, following the cut-off approach in life cycle assessment. The GHG emissions from off-site waste incineration with energy recovery were calculated by multiplying the amount of waste in this category by a suitable emission factor. The GHG emissions from off-site waste incineration without energy recovery as well as from landfill disposal were calculated based on a carbon balance. It was assumed that all carbon contained in the waste is eventually converted to CO2 during incineration or landfilling. From a survey of a variety of different chemical products, the average carbon content of a chemical product was determined. Multiplying the amount of waste by this factor yields the waste's total carbon content which is then converted to the amount of emitted CO2. The GHG emissions of BASF operated wastewater plants are accounted for in our Scope 1 or Scope 2 emissions, respectively. The CO2e emissions from non-BASF operated wastewater treatment plants were calculated as follows based on a TOC (Total Organic Carbon) material balance. It is assumed that 30% of the influent organic carbon load is insoluble and inert, as well as the nonbiodegradable TOC in the effluent. It is also assumed that 25% of the remaining biotreatable TOC is converted into biosludge during biotreatment. The residual TOC, which is about 50% of the total influent TOC, is converted into CO2. The CO2 emissions were calculated from the residual TOC with a conversion factor of CO2/TOC=3.67.

Business travel

Evaluation status

Not relevant, calculated

Emissions in reporting year (metric tons CO2e)

68,000

Emissions calculation methodology

Distance-based method

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

5

Please explain

(i) Activity data: Miles, kilometers and tank-to-wheel (TTW) greenhouse gas emissions per means of transportation travelled by BASF employees in the reporting year were directly reported by external partners (e.g. travel agencies) and provided to BASF's Travel Management. (ii) Emissions factors: CO2e conversion factors for short-haul, medium-haul and long-haul flights by flight class, including radiative forcing and fuel pre-chain emissions (well-to-tank) were taken from DEFRA's GHG Conversion Factors for Company Reporting (2022). CO2e emissions factors for travel conversion factors for travel by train per rail type were taken from DEFRA's GHG Conversion Factors for Company Reporting (2022). (iii) GWP values: GWP values as used by DEFRA referring to a time horizon of 100 years. (iv) Methodology & assumptions: The GHG emissions associated with the transportation of all BASF Group employees for business-related activities were calculated as follows: a) GHG emissions from business travel by air: Miles were converted to well-to-tank (WTT) CO2 equivalents based on the conversion factors including radiative forcing per passenger class type in short-haul, medium-haul and long-haul flights. These WTT values were then combined with the reported TTW CO2 equivalents to achieve a full life cycle analysis of GHG emissions generated from air travel. b) GHG emissions from business travel by train: Rail miles were converted into WTT CO2e emissions, using railway specific CO2e conversion factor for travel by train. These WTT values were then combined with the reported TTW CO2 equivalents to achieve a full life cycle analysis of GHG emissions generated from rail travel. c) GHG emissions from business travel by car: External partners (i.e., car rental companies) provided a summary of kilometers driven and the resulting GHG emissions for the reporting year.

Employee commuting

Evaluation status

Not relevant, calculated

Emissions in reporting year (metric tons CO2e)

176,000

Emissions calculation methodology

Average data method
Distance-based method

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

0

Please explain

(i) Activity data: Number of employees per region as well as distance and mode of transportation for a selected group of employees in Germany, who participated in a poll in 2017. (ii) Emissions factors: The CO2e emissions factors used for car, motorbike, and public transportation were taken from DEFRA's GHG Conversion Factors for Company Reporting (2022) for employee commuting in Europe and Asia and from EPA's mission Factors for Greenhouse Gas Inventories (2022) for North and South America. (iii) GWP values: GWP values as used by DEFRA and EPA, referring to a time horizon of 100 years. (iv) Methodology & assumptions: CO2e emissions from employee commuting in Europe were calculated based on the results of a representative poll conducted among BASF SE employees in 2017. Employees were asked about the distance travelled between their homes and workplaces and their means of transportation. The share of employees working from home were calculated based on 14.5% for Germany and 12.3% for the rest of Europe). GHG emissions were calculated by multiplying the travelled distance (202 days per year, back and forth) by the respective CO2e emissions factor accounting for the different means of transportation. The resulting GHG emissions were subsequently extrapolated to all BASF Group employees in Europe. For North America, the calculations were based on Bureau of Transportation Statistics on principal means of transportation to work. It was assumed that employees travel 233 days per year and 30 kilometers one-way. For Asia the calculation was based on data from Statista (Deskmag 2017 & McKinsey 2021) and assumes that employees travel 224 days per year and 30 kilometers one-way. For South America, it was assumed that all employees travel 30 km by car (one-way) and 253 days per year. The corresponding emissions were calculated by multiplying the distance by the number of employees, number of working days and emission factors per means of transportation.

Upstream leased assets

Evaluation status

Not relevant, calculated

Emissions in reporting year (metric tons CO2e)

168,000

Emissions calculation methodology

Average data method

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

0

Please explain

(i) Activity data: Leased cars: Vehicle miles as defined in the leasing contracts for BASF SE employees in the reporting year. Leased office and storage space: Data for the reporting year was obtained from BASF internal business data management systems. Leased equipment: Monetary purchasing volume for leased equipment in the reporting year was derived from BASF internal business data management systems. (ii)

Emissions factors: CO2 emissions factors for leased cars were provided by the car manufacturers. They differentiate between fuel type (diesel/gasoline) as well as cubic capacity. For electric cars the electricity consumption of the models was taken from the manufacturer's specification. Energy consumption (electricity and heat energy) per square meter of office space and warehouses in Europe was taken from a study of BMWi, 2015. For North and South America, it was taken from the Commercial Buildings Energy Consumption Survey (EIA, 2018). For Asia, it was taken from a study by Ding et al., 2017. Region-specific CO2 emissions factors per MWh were obtained from IEA, 2022. Emission factors for leased equipment were taken from the 2014 Guidelines to DEFRA/DECC's GHG Conversion Factors for Company Reporting, Annex 13 (Indirect emissions from supply chain). (iii) GWP values: GWP values as used by DEFRA or taken from IPCC, AR6, 2021 referring to a time horizon of 100 years. (iv) Methodology & assumptions: GHG emissions from leased assets were calculated for three different categories. 1) GHG emissions from cars leased by BASF SE were calculated by multiplying the vehicle miles travelled, which were derived from the respective leasing contracts, by the relevant CO2 emissions factors. Since only the leasing contracts of BASF SE were evaluated, the resulting GHG emissions were subsequently extrapolated based on the number of employees to account for the entire BASF Group. 2) The GHG emissions from leased offices and storage space were assessed based on leased space and the annual energy consumption per square meter of office and storage space, respectively. 3) The GHG emissions from leased equipment such as hardware (i.e. computers or printers) were assessed based on the monetary purchasing volume in the reporting year (with inflation adjustment and considering VAT) and the corresponding GHG conversion factors.

Downstream transportation and distribution

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

1,581,000

Emissions calculation methodology

Distance-based method

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

0

Please explain

(i) Activity data: Quantities of product, origin and destination points, mode of transport and load factors were obtained from BASF internal business data management systems. (ii) Emissions factors: The emission factors incorporated in the IT solution EcoTransIT World were used (//www.ecotransit.org/). (iii) GWP values: GWP values as used by EcoTransIT. (iv) Methodology & assumptions: For the calculation of the GHG emissions associated with the transport of BASF products sold in the reporting year, the respective shipments from BASF sites to BASF customers were evaluated using the IT solution EcoTransIT World.

Processing of sold products

Evaluation status

Not relevant, explanation provided

Please explain

BASF does not calculate and report GHG emissions from processing of sold products, as these emissions were identified as not being relevant to BASF. This is the result of a thorough analysis and balancing of the different relevance criteria for Scope 3 emissions sources and the five accounting and reporting principles of the GHG Protocol standards by WRI and WBCSD. BASF produces a large variety of intermediate goods. This application diversity cannot be tracked reasonably, and reliable figures on a yearly basis are virtually impossible to obtain. These circumstances strongly compromise the reporting principles completeness, consistency and accuracy (and feasibility), thereby not serving our business goal of reducing GHG emissions along the value chain. In addition, the WBCSD Chemical Sector Standard “Guidance for Accounting & Reporting Corporate GHG Emissions in the Chemical Sector Value Chain” emphasizes that “chemical companies are not required to report Scope 3, category 10 emissions, since reliable figures are difficult to obtain, due to the diverse application and customer structure”.

Use of sold products

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

3,186,000

Emissions calculation methodology

Methodology for direct use phase emissions, please specify

Direct use-phase emissions from greenhouse gases and products that contain or form greenhouse gases that are emitted during use

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

0

Please explain

(i) Activity data: Quantities and types of products sold in the reporting year were obtained from BASF internal business data management systems. (ii) Emissions factors: not applicable. (iii) GWP values: GWPs were taken from the 6th Assessment Report, IPCC, 2021. In the case of some fluorinated hydrocarbons, GWPs are based on manufacturers’ information. (iv) Methodology & assumptions: For calculation of the GHG emissions associated with the use of BASF products we only considered the direct use-phase emissions of sold products over their expected lifetime, i.e. the GHGs and products that contain or form GHGs that are emitted during use. 1) GHG emissions from products sold in the reporting year that form greenhouse gases: Nitrogenous fertilizers release nitrous oxide to the atmosphere because of microbial action in the soil.

Associated GHG emissions were calculated based on amount of N-containing fertilizers sold in the reporting year, nitrogen content and on the fact that about 1% (in presence of a nitrification inhibitor only 0.5%) of nitrogen contained in the fertilizer is converted into N2O-N. CO2 from the use of urea (as fertilizer and diesel exhaust liquid) and from the use of carbonates (as leavening agent) was calculated based on sold product quantity and contained CO2 amount. 2) GHG emissions from products sold in the reporting year that contain greenhouse gases such as dry ice, CO2 as gas for the beverage industry and HFCs as foaming agents to produce polyurethane foams: GHG emissions from dry ice and CO2 sold to the beverage industry were considered based on the sold quantity. GHG emissions from HFCs were calculated based on the procured HFC-quantities and loss rate of HFCs in the polyurethane foams during their use phase (100% over the entire life cycle).

End of life treatment of sold products

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

25,658,000

Emissions calculation methodology

Average data method

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

0

Please explain

(i) Activity data: Quantity of products (raw materials, pre-products and packaging) purchased in the reporting year and percentage of BASF's sales in Europe and in other regions were obtained from BASF internal business data management systems. The ratio of the different waste disposal methods (incineration, landfill, recycling) in each country/region was derived from data on municipal waste treatment provided by Eurostat (2020), OECD Statistics (2017, 2018), the Indian Central Pollution Control Board (2020, 2021), and the Chinese National Bureau of Statistics (2021). (ii) Emissions factors: not applicable. (iii) GWP values: GWP values referring to the time horizon of 100 years were taken from IPCC, AR6, 2021. (iv) Methodology & assumptions: GHG emissions from the disposal of all BASF products (except products that are already disposed of during their use phase and accounted for in the respective category) manufactured in the reporting year were calculated presuming that all BASF products at the end of their lives are either disposed of by landfilling or incineration, or recycled. It was assumed that the products would be used and disposed of in the countries to which BASF sold them. The amount of GHG emissions was calculated separately for each region and end-of-life method. Recycling was assigned zero emissions following the cut-off approach in life cycle assessment. The emissions from landfilling and incineration were calculated based on a carbon balance. It was assumed that all carbon contained in the products is eventually converted to CO2 after disposal. For this calculation the same range of chemicals as in Category 3.1 was considered since their amounts and C-

contents are known. Incineration with energy recovery was considered proportionately in Europe, North America and Asia. In accordance with the Guidance for Accounting & Reporting Corporate GHG Emissions in the Chemical Sector Value Chain, total emissions from incineration with energy recovery were allocated to the waste treatment and the energy generation with a zero emission factor by using an economic allocation approach based on proportions of total costs of waste treatment and total revenues from sale of generated steam and electricity.

Downstream leased assets

Evaluation status

Not relevant, calculated

Emissions in reporting year (metric tons CO2e)

100,000

Emissions calculation methodology

Average data method

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

0

Please explain

BASF owns only a few downstream leased assets. GHG emissions of this category are estimated to account for about 5% of the category Upstream Leased Assets, which corresponds to <0.1 million tons of CO2e.

Franchises

Evaluation status

Not relevant, explanation provided

Please explain

Not relevant as BASF does not own or operate franchises.

Investments

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

3,567,000

Emissions calculation methodology

Investment-specific method

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

100

Please explain

(i) Activity data: Scope 1 and Scope 2 emissions of BASF's equity-accounted joint ventures and associated companies were obtained from the respective companies upon inquiry. (ii) GWP values: not applicable and as used by the reporting companies, respectively. (iii) Methodology & assumptions: GHG emissions from equity-accounted joint ventures and equity-accounted associated companies are not included in BASF's Scope 1 or Scope 2 emissions. The GHG emissions from these companies are evaluated on a regular basis by inquiring these data from the respective companies, but only from non-consolidated companies of which BASF holds a minimum interest of 20%.

Other (upstream)

Evaluation status

Please explain

Other (downstream)

Evaluation status

Please explain

C6.7

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

Yes

C6.7a

(C6.7a) Provide the emissions from biogenic carbon relevant to your organization in metric tons CO2.

	CO2 emissions from biogenic carbon (metric tons CO2)	Comment
Row 1	84,000	This emission comprises biogenic CO2 from fermentations at Ludwigshafen, Germany and Gunsan, Korea as well as biogenic emissions from burning nutshells in Mangalore, India to generate steam and biogenic emissions from the Ludwigshafen sludge incinerator.

C6.10

(C6.10) Describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tons CO2e per unit currency total revenue and provide any additional intensity metrics that are appropriate to your business operations.

Intensity figure

0.0002196801

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

19,184,000

Metric denominator

unit total revenue

Metric denominator: Unit total

87,327,000,000

Scope 2 figure used

Market-based

% change from previous year

18

Direction of change

Decreased

Reason(s) for change

Other emissions reduction activities
Change in output
Change in revenue

Please explain

BASF's total GHG emissions per unit total revenue decreased by 18.2% in 2022 compared to 2021. The absolute gross Scope 1 and Scope 2 emissions decreased by 9.2% while revenues increased by 11.1% (+ € 8.7 billion). Sales growth was mainly driven by higher prices across almost all segments due to an increase in raw materials and energy prices. The Materials and Chemicals segments implemented the highest price increases. Currency effects considerably supported the positive sales development. The increase in natural gas prices in Europe due to the war in Ukraine, weaker demand due to a slowing economy over the course of the year, and several lockdowns in China led to a significant reduction in production volumes and, as a result, emissions in 2022. This particularly affected the emissions-intensive ammonia value chain. The share of electricity from renewable sources was kept roughly constant compared with the previous year and, together with measures to increase energy and

process efficiency, made a relevant contribution to reducing emissions. e.g. preventing hydrocarbons from flaring and emitting CO2 at the Antwerp Cracker.

Intensity figure

174.89

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

19,184,000

Metric denominator

full time equivalent (FTE) employee

Metric denominator: Unit total

109,694

Scope 2 figure used

Market-based

% change from previous year

9.8

Direction of change

Decreased

Reason(s) for change

Other emissions reduction activities
Change in output

Please explain

BASF decreased its GHG emissions per FTE employee in 2022 compared to 2021 by 9,8%. The number of FTE employees increased by 0.6% while absolute Scope 1 and Scope 2 emissions decreased by 9.2%, resulting in a significant decrease of the indicator value. After a decrease in the number of employees in 2020 due to the sale of the construction chemicals business, the number of people working for BASF was rather stable in 2021 and 2022 with no substantial mergers and acquisitions in 2022. The increase in natural gas prices in Europe, weaker demand over the course of the year and several lockdowns in China led to a significant reduction in production volumes and, as a result, reduced emissions in 2022. The share of electricity from renewable sources was kept roughly constant compared with the previous year and, together with measures to increase energy and process efficiency, made a relevant contribution to reducing emissions. BASF's Scope 1 and Scope 2 emissions decreased by 89,000 metric tons (t) of CO2e in 2022 due to emissions reduction activities implemented in 2022. More than 500 operational excellence measures were implemented in 2022, 312 measures reduced energy/resource consumption and emissions by roughly 80,000 metric tons of CO2 in 2022, many of them being heat recovery measures.

Intensity figure

0.601

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

19,184,000

Metric denominator

Other, please specify

Metric ton of sales product

Metric denominator: Unit total

31,935,382

Scope 2 figure used

Market-based

% change from previous year

2.3

Direction of change

Increased

Reason(s) for change

Other emissions reduction activities

Change in output

Please explain

This intensity figure refers to GHG emissions and volume of sales products for BASF EXCLUDING emissions related to the generation of steam and electricity for sale to third parties; this matches the scope of our corporate climate protection target. BASF increased its GHG emissions per metric ton of sales products in 2022 compared to 2021 by 2.3% (2021: 0.564 tCO2e per ton of sales product). The volume of sales products from businesses within the reporting boundary decreased by 10.8%. The relevant Scope 1 and 2 emissions (i.e. excluding emissions related to the generation of steam and electricity for sale to third parties) decreased by 8.7% in 2022. Emissions did not decrease in the same intensity as sales product. Energy use and greenhouse gas emissions are closely linked to capacity utilization at our plants as well as our product port-folio. The increase in specific emissions, i.e. emissions per t of sales product was mainly due to lower and less uniform capacity utilization at our plants compared with the previous year, which led to reduced plant efficiency. By contrast, the use of renewable energy had a positive impact on specific greenhouse gas emissions and together with measures to increase energy and process efficiency, made a relevant contribution to reducing emissions. In 2022, we implemented more than 500 measures to reduce energy and resource consumption and increase our competitiveness. BASF's Scope 1 and Scope 2 emissions decreased by 89,000 metric tons (t) of CO2e in 2022 due to emissions reduction activities implemented in 2022. More than 500 operational excellence measures were implemented in 2022, 312 measures reduced energy/resource consumption and emissions by roughly 80,000 metric tons of CO2 in

2022, e.g. optimized N2O decomposition at our Shanghai and Ludwigshafen Nitric Acid plants.

C7. Emissions breakdowns

C7.1

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

Yes

C7.1a

(C7.1a) Break down your total gross global Scope 1 emissions by greenhouse gas type and provide the source of each used greenhouse warming potential (GWP).

Greenhouse gas	Scope 1 emissions (metric tons of CO2e)	GWP Reference
CO2	16,192,350.71	IPCC Fifth Assessment Report (AR5 – 100 year)
CH4	25,240.016	IPCC Fifth Assessment Report (AR5 – 100 year)
N2O	305,721.783	IPCC Fifth Assessment Report (AR5 – 100 year)
HFCs	31,224.89	IPCC Fifth Assessment Report (AR5 – 100 year)
SF6	702	IPCC Fifth Assessment Report (AR5 – 100 year)

C7.2

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

Country/area/region	Scope 1 emissions (metric tons CO2e)
Belgium	2,510,000
Brazil	92,000
China	315,000
France	35,000
Germany	6,521,000
India	22,000
Italy	47,000
Japan	4,000
Republic of Korea	366,000

Spain	23,000
United States of America	4,328,000
Malaysia	380,603
Other, please specify Rest of world	1,911,636.344

C7.3

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

By facility

C7.3b

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

Facility	Scope 1 emissions (metric tons CO2e)	Latitude	Longitude
Ludwigshafen, Germany	6,150,000	49.49594	8.431191
Antwerp, Belgium	3,003,000	51.32405	4.285598
Kuantan, Malaysia	385,000	3.967425	103.4237
Freeport, USA	815,000	29.00441	-95.3933
Geismar, USA	890,000	30.21022	-91.0345
Rest of world	5,312,239.344	0	0

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

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

	Gross Scope 1 emissions, metric tons CO2e	Comment
Chemicals production activities	15,796,710.167	

C7.5

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

Country/area/region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Belgium	168,000	47,000
Brazil	20,000	7,000
China	1,034,000	714,000
France	10,000	8,000

Germany	421,000	362,000
India	47,000	47,000
Italy	7,000	0
Japan	56,000	44,000
Republic of Korea	287,000	287,000
Spain	19,000	16,000
United States of America	885,000	625,000
Other, please specify Rest of world	416,000	399,136.851
Malaysia	188,000	73,000

C7.6

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

By facility

C7.6b

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

Facility	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Ludwigshafen, Germany	65,000	93,000
Antwerp, Belgium	211,000	86,000
Kuantan, Malaysia	175,000	61,000
Freeport, USA	97,000	72,000
Geismar, USA	172,000	152,000
Rest of world	2,838,000	2,165,136.851

C7.7

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

No

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

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

	Scope 2, location-based, metric tons CO2e	Scope 2, market-based (if applicable), metric tons CO2e	Comment
Chemicals production activities	3,558,000	2,629,000	

C-CH7.8

(C-CH7.8) Disclose the percentage of your organization's Scope 3, Category 1 emissions by purchased chemical feedstock.

Purchased feedstock	Percentage of Scope 3, Category 1 tCO2e from purchased feedstock	Explain calculation methodology
High Value Chemicals (Steam cracking)	11	Activity data: Quantities of high-value chemicals (HVCs) purchased in the reporting year were obtained from BASF internal business data management systems. Note that we are not able to separate HVCs from steam cracking from other HVC sources and therefore report the share of total HVCs-related emissions here. (i) Emissions factors: Cradle-to-gate emissions factors were obtained from commercially and publicly available data sources such as GaBi (sphera), ecoinvent and PlasticsEurope as well as from BASF's own LCA database, which is based mainly on primary data. (ii) GWP values: GWP values referring to the time horizon of 100 years were taken from IPCC AR6, 2021. (iv) Methodology and assumptions: We analyzed the GHG emissions of the procured HVCs and precursor manufacturing at BASF's suppliers' facilities (including merchandise) by calculating the cradle-to-gate emissions, including all direct GHG emissions from raw material extraction, precursor manufacturing and transport, as well as indirect emissions from energy use. To do so, we determined the quantity of each single product purchased, and then applied emission factors. We multiplied the CO2e emissions per kilogram of each product by the respective quantity of the product purchased to determine cradle-to-gate emissions.

C-CH7.8a

(C-CH7.8a) Disclose sales of products that are greenhouse gases.

	Sales, metric tons	Comment
Carbon dioxide (CO2)	156,000	BASF is selling carbon dioxide, e.g. to the beverage industry.
Methane (CH4)	0	BASF is not selling this product
Nitrous oxide (N2O)	0	BASF is not selling this product
Hydrofluorocarbons (HFC)	0	BASF is not selling this product
Perfluorocarbons (PFC)	0	BASF is not selling this product
Sulphur hexafluoride (SF6)	0	BASF is not selling this product
Nitrogen trifluoride (NF3)	0	BASF is not selling this product

C7.9

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

Decreased

C7.9a

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

	Change in emissions (metric tons CO2e)	Direction of change in emissions	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	200,000	Increased	0.9	BASF's Scope 1 and Scope 2 emissions concerning renewable electricity increased by some 200,000 metric tons (t) of CO2e in 2022 compared to 2021 due to a different landscape in renewable energy sourcing. Our total Scope 1 and Scope 2 emissions in 2021 were 21,132,000 t CO2e, therefore we arrived at 0.9% ((200000/21,132,000)*100 = 0.9%). We supplied more sites with renewable electricity, but in different countries leading to a different effect on the change

				in Scope 2 emissions. In general we had an increase in contract-bound sourcing and a decrease in short-term measures (Guarantees of Origin or Renewable Energy Certificates). In the US and China, for example we bought less renewable electricity, in Brazil we increased the share heavily. The effect created in low emission electricity countries like Brazil is not as large as in countries with a substantial fraction of coal based electricity generation (US and China e.g.). 108 sites worldwide(2021:88 sites) are fully or partially sourced by renewable electricity now. In 2022, renewable electricity maintained a 16% share of total consumption. In absolute numbers we however bought less renewable energy in 2022 than in 2021, since we consumed less electricity all in all.
Other emissions reduction activities	89,000	Decreased	0.4	BASF's Scope 1 and Scope 2 emissions decreased by 89,000 metric tons (t) of CO2e in 2022 compared to 2021 due to emissions reduction activities implemented in 2022. Our total Scope 1 and Scope 2 emissions in 2021 were 21,132,000 t CO2e, therefore we arrived at 0.4% through (89,000/21,132,000)*100 = 0.4%. The emission reduction activities in 2022 can be broken down as follows: More than 500+ operational excellence measures were implemented in 2022, 312 measures reduced energy/resource consumption and emissions by roughly 80,000 metric tons of CO2 in 2022, including optimized N2O decomposition at our Shanghai and Ludwigshafen Nitric Acid plants, preventing hydrocarbons from flaring and emitting CO2 at the Antwerp Cracker and timized control at Kuantan and several heat recovery measures. -Employee ideas in 2022 have significantly contributed to optimization, allowing us to save around 9,000 metric

				tons of CO2 annually at our Ludwigshafen site in Germany.
Divestment	70,000	Decreased	0.3	The emissions from our operations decreased by 0.3% (corresponding to 70,000 metric tons of CO2e) in 2022 compared to 2021. Our total Scope 1 and Scope 2 emissions in 2021 were 21,132,000 t CO2e, therefore we arrived at 0.3% through (70,000/21,132,000)*100 = 0.3%. BASF closed the divestiture of its Kaolin minerals business to KaMin in September 2022, comprising production hubs, reserves, mills and related sites in Georgia. In addition, there was the divestiture of the production site in Quincy, Florida, and the associated attapulgite business. All divestitures were effective mid-year. Only the effects of the months where the divestment was effective were taken into account.
Acquisitions	0	No change	0	No activities were acquired in 2022.
Mergers	0	No change	0	Category not relevant in the actual year-on-year comparison.
Change in output	3,030,000	Decreased	14.3	In 2022 the volume of production from the operations within the reporting boundary decreased in comparison to 2021.The increase in natural gas prices in Europe due to the war in Ukraine, weaker demand due to a slowing economy over the course of the year and several lockdowns in China led to a significant reduction in production volumes. Assuming that the GHG intensity of our various businesses in 2021 had continued to apply in 2022, this corresponded to a 14.3% emission reduction (3,030,000 metric tons of CO2e) in 2022 in comparison to 2021. Our total Scope 1 and Scope 2 emissions in 2021 were 21,132,000t CO2e, therefore we arrived at 14.3% through (3,030,000/21,132,000)*100 = 14.3%.
Change in methodology	0	No change	0	No changes in 2022.

Change in boundary	0	No change	0	Category not relevant in the actual year-on-year comparison.
Change in physical operating conditions	0	No change	0	Category not relevant in the actual year-on-year comparison.
Unidentified	0	No change	0	Category not relevant in the actual year-on-year comparison.
Other	1,041,000	Increased	4.9	BASF is accounting for GHG emissions from about 250 production sites globally. Changes in local operating conditions of these sites (e.g. technical variation of process parameters, dynamic production planning and control, maintenance work during operations, environmental conditions) affect the GHG emissions of these sites. However, the individual factors of influence usually cannot be quantified separately due to the complexity of the sites, hence only their cumulative effect is subsumed under “Other”. In 2022, changes in local operating conditions resulted in a net increase of emissions of 4.9% (corresponding to 1,041,000 metric tons of CO2e) compared to 2021. Our total Scope 1 and Scope 2 emissions in 2021 were 21,132,000 t CO2e, therefore we arrived at 4.9% through (1,041,000/21,132,000)*100 = 4.9%. With many processes running less efficiently due to decreased capacity usage because of the econonomic downturn this effect also leads to an overall increase GHG emissions intensity, emission factors for numerous plants/products/processes increased significantly due to low output and efficiency. Moreover, due to the gas crisis in Europe several sites, especially in Germany had to rely on light oil for selected processes rather than natural gas. Our heating oil consumption globally was 0.8 million MWh in 2022 compared to 0.1 million MWh in 2021, resulting in a

				plus in emissions of roughly 200,000 metric tons of CO2.

C7.9b

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

Market-based

C8. Energy

C8.1

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

More than 0% but less than or equal to 5%

C8.2

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

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

C8.2a

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

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total (renewable and non-renewable) MWh

Consumption of fuel (excluding feedstock)	LHV (lower heating value)	15,000	44,510,000	44,525,000
Consumption of purchased or acquired electricity		2,309,000	1,576,000	3,885,000
Consumption of purchased or acquired steam		0	5,469,000	5,469,000
Consumption of self-generated non-fuel renewable energy		4,000		4,000
Total energy consumption		2,328,000	51,555,000	53,883,000

C-CH8.2a

(C-CH8.2a) Report your organization's energy consumption totals (excluding feedstocks) for chemical production activities in MWh.

Consumption of fuel (excluding feedstocks)

Heating value

LHV (lower heating value)

MWh consumed from renewable sources inside chemical sector boundary

15,000

MWh consumed from non-renewable sources inside chemical sector boundary (excluding recovered waste heat/gases)

38,571,000

MWh consumed from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary

5,939,000

Total MWh (renewable + non-renewable + MWh from recovered waste heat/gases) consumed inside chemical sector boundary

44,525,000

Consumption of purchased or acquired electricity

MWh consumed from renewable sources inside chemical sector boundary

2,263,000

MWh consumed from non-renewable sources inside chemical sector boundary (excluding recovered waste heat/gases)

1,576,000

MWh consumed from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary

0

Total MWh (renewable + non-renewable + MWh from recovered waste heat/gases) consumed inside chemical sector boundary

3,839,000

Consumption of purchased or acquired steam

MWh consumed from renewable sources inside chemical sector boundary

0

MWh consumed from non-renewable sources inside chemical sector boundary (excluding recovered waste heat/gases)

3,624,000

MWh consumed from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary

1,845,000

Total MWh (renewable + non-renewable + MWh from recovered waste heat/gases) consumed inside chemical sector boundary

5,469,000

Consumption of self-generated non-fuel renewable energy

MWh consumed from renewable sources inside chemical sector boundary

4,000

MWh consumed from non-renewable sources inside chemical sector boundary (excluding recovered waste heat/gases)

0

MWh consumed from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary

0

Total MWh (renewable + non-renewable + MWh from recovered waste heat/gases) consumed inside chemical sector boundary

4,000

Total energy consumption

MWh consumed from renewable sources inside chemical sector boundary

2,282,000

MWh consumed from non-renewable sources inside chemical sector boundary (excluding recovered waste heat/gases)

43,771,000

MWh consumed from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary

7,784,000

Total MWh (renewable + non-renewable + MWh from recovered waste heat/gases) consumed inside chemical sector boundary

53,837,000

C8.2b

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

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

C8.2c

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

Sustainable biomass

Heating value

LHV

Total fuel MWh consumed by the organization

15,000

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

15,000

MWh fuel consumed for self- cogeneration or self-trigeneration

0

Comment

Other biomass

Heating value

LHV

Total fuel MWh consumed by the organization

0

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self- cogeneration or self-trigeneration

0

Comment

Other renewable fuels (e.g. renewable hydrogen)

Heating value

LHV

Total fuel MWh consumed by the organization

0

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self- cogeneration or self-trigeneration

0

Comment

Coal

Heating value
LHV

Total fuel MWh consumed by the organization
1,086,000

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
228,000

MWh fuel consumed for self-generation of steam
858,000

MWh fuel consumed for self- cogeneration or self-trigeneration
0

Comment

Oil

Heating value
LHV

Total fuel MWh consumed by the organization
823,000

MWh fuel consumed for self-generation of electricity
9,000

MWh fuel consumed for self-generation of heat
34,000

MWh fuel consumed for self-generation of steam
790,000

MWh fuel consumed for self- cogeneration or self-trigeneration
0

Comment

Gas

Heating value
LHV

Total fuel MWh consumed by the organization
36,662,000

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

10,609,000

MWh fuel consumed for self-generation of steam

3,077,000

MWh fuel consumed for self- cogeneration or self-trigeneration

22,976,000

Comment

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

Heating value

LHV

Total fuel MWh consumed by the organization

5,939,000

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

983,000

MWh fuel consumed for self- cogeneration or self-trigeneration

4,956,000

Comment

Total fuel

Heating value

LHV

Total fuel MWh consumed by the organization

44,525,000

MWh fuel consumed for self-generation of electricity

9,000

MWh fuel consumed for self-generation of heat

10,871,000

MWh fuel consumed for self-generation of steam

5,723,000

MWh fuel consumed for self- cogeneration or self-trigeneration

27,932,000

Comment

C8.2d

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

	Total Gross generation (MWh)	Generation that is consumed by the organization (MWh)	Gross generation from renewable sources (MWh)	Generation from renewable sources that is consumed by the organization (MWh)
Electricity	8,895,000	7,734,000	4,000	4,000
Heat	10,870,000	10,870,000	0	0
Steam	38,252,000	34,969,000	14,000	14,000
Cooling	0	0	0	0

C-CH8.2d

(C-CH8.2d) Provide details on electricity, heat, steam, and cooling your organization has generated and consumed for chemical production activities.

Electricity

Total gross generation inside chemicals sector boundary (MWh)

8,895,000

Generation that is consumed inside chemicals sector boundary (MWh)

7,734,000

Generation from renewable sources inside chemical sector boundary (MWh)

4,000

Generation from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary (MWh)

0

Heat

Total gross generation inside chemicals sector boundary (MWh)

10,870,000

Generation that is consumed inside chemicals sector boundary (MWh)

10,870,000

Generation from renewable sources inside chemical sector boundary (MWh)

0

Generation from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary (MWh)

0

Steam

Total gross generation inside chemicals sector boundary (MWh)

38,252,000

Generation that is consumed inside chemicals sector boundary (MWh)

34,969,000

Generation from renewable sources inside chemical sector boundary (MWh)

14,000

Generation from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary (MWh)

18,238,000

Cooling

Total gross generation inside chemicals sector boundary (MWh)

0

Generation that is consumed inside chemicals sector boundary (MWh)

0

Generation from renewable sources inside chemical sector boundary (MWh)

0

Generation from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary (MWh)

0

C8.2e

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

Country/area of low-carbon energy consumption

United States of America

Sourcing method

Physical power purchase agreement (physical PPA) with a grid-connected generator

Energy carrier

Electricity

Low-carbon technology type

Renewable energy mix, please specify

Wind, Solar

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

145,000

Tracking instrument used

US-REC

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

United States of America

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

Yes

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

2021

Comment

Country/area of low-carbon energy consumption

United States of America

Sourcing method

Unbundled procurement of energy attribute certificates (EACs)

Energy carrier

Electricity

Low-carbon technology type

Renewable energy mix, please specify

Wind

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

508,000

Tracking instrument used

US-REC

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

United States of America

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

No

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

Comment

Country/area of low-carbon energy consumption

Canada

Sourcing method

Retail supply contract with an electricity supplier (retail green electricity)

Energy carrier

Electricity

Low-carbon technology type

Renewable energy mix, please specify

Solar, Wind

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

7,000

Tracking instrument used

I-REC

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

Canada

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

No

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

Comment

Country/area of low-carbon energy consumption
Mexico

Sourcing method
Retail supply contract with an electricity supplier (retail green electricity)

Energy carrier
Electricity

Low-carbon technology type
Renewable energy mix, please specify
Wind, Solar

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)
4,000

Tracking instrument used
No instrument used

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

Are you able to report the commissioning or re-powering year of the energy generation facility?
No

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

Comment

Country/area of low-carbon energy consumption
Brazil

Sourcing method
Unbundled procurement of energy attribute certificates (EACs)

Energy carrier
Electricity

Low-carbon technology type
Renewable energy mix, please specify
Wind, Solar

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

296,000

Tracking instrument used

I-REC

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

Brazil

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

No

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

Comment

Country/area of low-carbon energy consumption

Argentina

Sourcing method

Unbundled procurement of energy attribute certificates (EACs)

Energy carrier

Electricity

Low-carbon technology type

Wind

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

5,000

Tracking instrument used

I-REC

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

Argentina

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

Yes

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

2020

Comment

Country/area of low-carbon energy consumption

Chile

Sourcing method

Unbundled procurement of energy attribute certificates (EACs)

Energy carrier

Electricity

Low-carbon technology type

Hydropower (capacity unknown)

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

3,000

Tracking instrument used

I-REC

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

Chile

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

Yes

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

2018

Comment

Country/area of low-carbon energy consumption

China

Sourcing method

Unbundled procurement of energy attribute certificates (EACs)

Energy carrier
Electricity

Low-carbon technology type
Wind

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)
171,000

Tracking instrument used
I-REC

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

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

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)
2013

Comment

Country/area of low-carbon energy consumption
China

Sourcing method
Default delivered electricity from the grid (e.g. standard product offering by an energy supplier), supported by energy attribute certificates

Energy carrier
Electricity

Low-carbon technology type
Renewable energy mix, please specify
Wind, Solar

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)
225,000

Tracking instrument used
Other, please specify
Green Electricity Consumption Certificate (Beijing Power Exchange Center)

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

China

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

No

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

Comment

Country/area of low-carbon energy consumption

Germany

Sourcing method

Retail supply contract with an electricity supplier (retail green electricity)

Energy carrier

Electricity

Low-carbon technology type

Renewable energy mix, please specify

Wind, solar

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

117,000

Tracking instrument used

GO

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

Germany

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

No

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

Comment

Country/area of low-carbon energy consumption
Germany

Sourcing method
Unbundled procurement of energy attribute certificates (EACs)

Energy carrier
Electricity

Low-carbon technology type
Wind

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)
28,000

Tracking instrument used
GO

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

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

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)
2019

Comment

Country/area of low-carbon energy consumption
Belgium

Sourcing method
Physical power purchase agreement (physical PPA) with a grid-connected generator

Energy carrier
Electricity

Low-carbon technology type
Wind

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

447,000

Tracking instrument used

GO

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

Spain

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

Yes

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

2022

Comment

Country/area of low-carbon energy consumption

Netherlands

Sourcing method

Retail supply contract with an electricity supplier (retail green electricity)

Energy carrier

Electricity

Low-carbon technology type

Renewable energy mix, please specify

Wind, Solar

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

46,000

Tracking instrument used

GO

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

Netherlands

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

No

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

Comment

Country/area of low-carbon energy consumption
Switzerland

Sourcing method
Unbundled procurement of energy attribute certificates (EACs)

Energy carrier
Electricity

Low-carbon technology type
Wind

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)
38,000

Tracking instrument used
GO

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

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

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)
2019

Comment

Country/area of low-carbon energy consumption
Italy

Sourcing method
Unbundled procurement of energy attribute certificates (EACs)

Energy carrier
Electricity

Low-carbon technology type
Renewable energy mix, please specify
Solar, Wind

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)
27,000

Tracking instrument used
GO

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

Are you able to report the commissioning or re-powering year of the energy generation facility?
No

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

Comment

Country/area of low-carbon energy consumption
Spain

Sourcing method
Unbundled procurement of energy attribute certificates (EACs)

Energy carrier
Electricity

Low-carbon technology type
Wind

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)
12,000

Tracking instrument used
GO

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

Spain

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

Yes

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

2019

Comment

Country/area of low-carbon energy consumption

Poland

Sourcing method

Retail supply contract with an electricity supplier (retail green electricity)

Energy carrier

Electricity

Low-carbon technology type

Wind

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

27,000

Tracking instrument used

GO

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

Poland

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

No

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

Comment

Country/area of low-carbon energy consumption
France

Sourcing method
Retail supply contract with an electricity supplier (retail green electricity)

Energy carrier
Electricity

Low-carbon technology type
Wind

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)
21,000

Tracking instrument used
GO

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

Are you able to report the commissioning or re-powering year of the energy generation facility?
No

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

Comment

Country/area of low-carbon energy consumption
Turkey

Sourcing method
Unbundled procurement of energy attribute certificates (EACs)

Energy carrier
Electricity

Low-carbon technology type
Small hydropower (<25 MW)

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

10,000

Tracking instrument used

I-REC

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

Turkey

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

Yes

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

2010

Comment

Country/area of low-carbon energy consumption

Ireland

Sourcing method

Retail supply contract with an electricity supplier (retail green electricity)

Energy carrier

Electricity

Low-carbon technology type

Renewable energy mix, please specify

Wind

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

8,000

Tracking instrument used

GO

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

Ireland

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

No

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

Comment

Country/area of low-carbon energy consumption
United Kingdom of Great Britain and Northern Ireland

Sourcing method
Retail supply contract with an electricity supplier (retail green electricity)

Energy carrier
Electricity

Low-carbon technology type
Sustainable biomass

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)
7,000

Tracking instrument used
REGO

Country/area of origin (generation) of the low-carbon energy or energy attribute
United Kingdom of Great Britain and Northern Ireland

Are you able to report the commissioning or re-powering year of the energy generation facility?
No

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

Comment

Country/area of low-carbon energy consumption
Germany

Sourcing method
Physical power purchase agreement (physical PPA) with a grid-connected generator

Energy carrier
Electricity

Low-carbon technology type
Wind

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)
131,000

Tracking instrument used
GO

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

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

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)
2019

Comment

Country/area of low-carbon energy consumption
Spain

Sourcing method
Physical power purchase agreement (physical PPA) with a grid-connected generator

Energy carrier
Electricity

Low-carbon technology type
Wind

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)
18,000

Tracking instrument used
GO

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

Spain

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

Yes

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

2019

Comment

C8.2g

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

Country/area

Argentina

Consumption of purchased electricity (MWh)

5,357

Consumption of self-generated electricity (MWh)

33

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

0

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

5,874

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

11,264

Country/area

Australia

Consumption of purchased electricity (MWh)

5,855

Consumption of self-generated electricity (MWh)

45

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

0

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

550

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

6,450

Country/area

Bahrain

Consumption of purchased electricity (MWh)

4,156

Consumption of self-generated electricity (MWh)

140

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

0

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

0

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

4,296

Country/area

Belgium

Consumption of purchased electricity (MWh)

815,368

Consumption of self-generated electricity (MWh)

829,993

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

308,986

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

4,227,387

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

6,181,734

Country/area
Brazil

Consumption of purchased electricity (MWh)
292,983

Consumption of self-generated electricity (MWh)
1,351

Consumption of purchased heat, steam, and cooling (MWh)
27,699

Consumption of self-generated heat, steam, and cooling (MWh)
357,494

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

679,527

Country/area
Canada

Consumption of purchased electricity (MWh)
24,939

Consumption of self-generated electricity (MWh)
0

Consumption of purchased heat, steam, and cooling (MWh)
0

Consumption of self-generated heat, steam, and cooling (MWh)
37,239

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

62,178

Country/area
Chile

Consumption of purchased electricity (MWh)
3,412

Consumption of self-generated electricity (MWh)
8

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

0

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

11,696

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

15,116

Country/area

China

Consumption of purchased electricity (MWh)

1,098,081

Consumption of self-generated electricity (MWh)

1,942

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

1,153,644

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

1,916,019

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

4,169,686

Country/area

Denmark

Consumption of purchased electricity (MWh)

6,148

Consumption of self-generated electricity (MWh)

0

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

0

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

9,671

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

15,819

Country/area
Finland

Consumption of purchased electricity (MWh)
5,199

Consumption of self-generated electricity (MWh)
0

Consumption of purchased heat, steam, and cooling (MWh)
32,323

Consumption of self-generated heat, steam, and cooling (MWh)
0

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

37,522

Country/area
France

Consumption of purchased electricity (MWh)
257,153

Consumption of self-generated electricity (MWh)
27,194

Consumption of purchased heat, steam, and cooling (MWh)
155,030

Consumption of self-generated heat, steam, and cooling (MWh)
1,296,142

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

1,735,519

Country/area
Germany

Consumption of purchased electricity (MWh)
544,834

Consumption of self-generated electricity (MWh)
5,397,003

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

1,175,781

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

13,070,741

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

20,188,359

Country/area

United Kingdom of Great Britain and Northern Ireland

Consumption of purchased electricity (MWh)

11,091

Consumption of self-generated electricity (MWh)

14

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

1,219

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

27,824

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

40,148

Country/area

India

Consumption of purchased electricity (MWh)

67,725

Consumption of self-generated electricity (MWh)

1,530

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

0

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

62,404

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

131,659

Country/area
Indonesia

Consumption of purchased electricity (MWh)
19,809

Consumption of self-generated electricity (MWh)
0

Consumption of purchased heat, steam, and cooling (MWh)
0

Consumption of self-generated heat, steam, and cooling (MWh)
38,086

Total non-fuel energy consumption (MWh) [Auto-calculated]
57,895

Country/area
Ireland

Consumption of purchased electricity (MWh)
8,493

Consumption of self-generated electricity (MWh)
0

Consumption of purchased heat, steam, and cooling (MWh)
0

Consumption of self-generated heat, steam, and cooling (MWh)
23,538

Total non-fuel energy consumption (MWh) [Auto-calculated]
32,031

Country/area
Italy

Consumption of purchased electricity (MWh)
26,946

Consumption of self-generated electricity (MWh)
35,945

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

0

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

150,764

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

213,655

Country/area

Japan

Consumption of purchased electricity (MWh)

115,784

Consumption of self-generated electricity (MWh)

0

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

8,984

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

11,359

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

136,127

Country/area

Republic of Korea

Consumption of purchased electricity (MWh)

582,317

Consumption of self-generated electricity (MWh)

0

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

526,254

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

1,350,477

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

2,459,048

Country/area
Malaysia

Consumption of purchased electricity (MWh)
292,249

Consumption of self-generated electricity (MWh)
80,896

Consumption of purchased heat, steam, and cooling (MWh)
7,887

Consumption of self-generated heat, steam, and cooling (MWh)
1,232,009

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

1,613,041

Country/area
Mexico

Consumption of purchased electricity (MWh)
32,727

Consumption of self-generated electricity (MWh)
0

Consumption of purchased heat, steam, and cooling (MWh)
8,005

Consumption of self-generated heat, steam, and cooling (MWh)
58,261

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

98,993

Country/area
Netherlands

Consumption of purchased electricity (MWh)
104,905

Consumption of self-generated electricity (MWh)
0

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

478,864

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

9,281

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

593,050

Country/area

New Zealand

Consumption of purchased electricity (MWh)

60

Consumption of self-generated electricity (MWh)

0

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

0

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

0

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

60

Country/area

Norway

Consumption of purchased electricity (MWh)

9,812

Consumption of self-generated electricity (MWh)

0

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

0

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

31,676

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

41,488

Country/area
Poland

Consumption of purchased electricity (MWh)
26,672

Consumption of self-generated electricity (MWh)
0

Consumption of purchased heat, steam, and cooling (MWh)
0

Consumption of self-generated heat, steam, and cooling (MWh)
0

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

26,672

Country/area
Puerto Rico

Consumption of purchased electricity (MWh)
9,290

Consumption of self-generated electricity (MWh)
0

Consumption of purchased heat, steam, and cooling (MWh)
0

Consumption of self-generated heat, steam, and cooling (MWh)
779

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

10,069

Country/area
Russian Federation

Consumption of purchased electricity (MWh)
442

Consumption of self-generated electricity (MWh)
0

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

0

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

0

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

442

Country/area

Singapore

Consumption of purchased electricity (MWh)

22,010

Consumption of self-generated electricity (MWh)

0

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

57,374

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

0

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

79,384

Country/area

Slovakia

Consumption of purchased electricity (MWh)

324

Consumption of self-generated electricity (MWh)

0

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

0

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

0

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

324

Country/area
South Africa

Consumption of purchased electricity (MWh)
12,909

Consumption of self-generated electricity (MWh)
13

Consumption of purchased heat, steam, and cooling (MWh)
2,473

Consumption of self-generated heat, steam, and cooling (MWh)
0

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

15,395

Country/area
Spain

Consumption of purchased electricity (MWh)
74,897

Consumption of self-generated electricity (MWh)
0

Consumption of purchased heat, steam, and cooling (MWh)
38,445

Consumption of self-generated heat, steam, and cooling (MWh)
57,962

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

171,304

Country/area
Switzerland

Consumption of purchased electricity (MWh)
44,544

Consumption of self-generated electricity (MWh)
0

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

77,842

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

72,013

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

194,399

Country/area

Taiwan, China

Consumption of purchased electricity (MWh)

58,680

Consumption of self-generated electricity (MWh)

0

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

5,600

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

15,875

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

80,155

Country/area

Thailand

Consumption of purchased electricity (MWh)

35,351

Consumption of self-generated electricity (MWh)

0

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

0

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

19,661

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

55,012

Country/area
Turkey

Consumption of purchased electricity (MWh)
15,767

Consumption of self-generated electricity (MWh)
0

Consumption of purchased heat, steam, and cooling (MWh)
0

Consumption of self-generated heat, steam, and cooling (MWh)
26,843

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

42,610

Country/area
United States of America

Consumption of purchased electricity (MWh)
1,848,807

Consumption of self-generated electricity (MWh)
1,357,948

Consumption of purchased heat, steam, and cooling (MWh)
1,402,612

Consumption of self-generated heat, steam, and cooling (MWh)
10,847,759

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

15,457,126

C-CH8.3

(C-CH8.3) Does your organization consume fuels as feedstocks for chemical production activities?
Yes

C-CH8.3a

(C-CH8.3a) Disclose details on your organization's consumption of fuels as feedstocks for chemical production activities.

Fuels used as feedstocks

Other, please specify

Total fuel feedstock. This excludes non-fuel chemical feedstocks

Total consumption

10,200,000

Total consumption unit

metric tons

Inherent carbon dioxide emission factor of feedstock, metric tons CO2 per consumption unit

2.8

Heating value of feedstock, MWh per consumption unit

11.9

Heating value

LHV

Comment

The breakdown of our feedstock mix is considered confidential business information. Therefore, we present the sum of fuel feedstocks that are listed by name in the selection menu of the feedstocks column as well as a weighted average emission factor and heating value. Note that all carbon feedstocks are not combusted to result in CO2 emissions but used as raw materials as C-source for other higher-value chemicals. The oxidation level in the final product will be most likely +IV.

C-CH8.3b

(C-CH8.3b) State the percentage, by mass, of primary resource from which your chemical feedstocks derive.

	Percentage of total chemical feedstock (%)
Oil	72
Natural Gas	23
Coal	0
Biomass	5
Waste (non-biomass)	0
Fossil fuel (where coal, gas, oil cannot be distinguished)	0
Unknown source or unable to disaggregate	0

C9. Additional metrics

C9.1

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

C-CH9.3a

(C-CH9.3a) Provide details on your organization's chemical products.

Output product
Butadiene (C4 sep.)

Production (metric tons)
410,000

Capacity (metric tons)
680,000

Direct emissions intensity (metric tons CO2e per metric ton of product)
0.01

Electricity intensity (MWh per metric ton of product)
0.1

Steam intensity (MWh per metric ton of product)
0.68

Steam/ heat recovered (MWh per metric ton of product)
0

Comment
Production volume is an indicative figure relating to the years 2019-2021. Specific emissions and electricity / steam consumption refer to butadiene produced globally. Three-year-average values (2019-2021) for the process (not cradle to gate) from our Strategic CO2-Transparency Tool (SCOTT) were used (along with the necessary allocations chosen there, e.g. mass-wise).

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

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

	Investment in low-carbon R&D	Comment

Row 1	Yes	R&D in the field resources, envirnoment and climate.

C-CH9.6a

(C-CH9.6a) Provide details of your organization's investments in low-carbon R&D for chemical production activities over the last three years.

Technology area

Other, please specify

Product and process innovations where the R&D target is related to energy/resource efficiency and climate protection

Stage of development in the reporting year

Applied research and development

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

55

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

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

60

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

R&D activities at BASF are directed to contribute to the company's purpose "We create chemistry for a sustainable future", expressing our understanding of the need to address the demands of a growing world population while the planet's resources (including the atmosphere's capacity to take up GHGs) are finite.

In this context, BASF has derived three major areas in which chemistry-based innovations will play a key role in the future:
• resources, environment, and climate;
• food and nutrition;
• and quality of life.

Annual R&D investment in the focus area "resources, environment and climate" has ranged from around 40% to more than 60% of the total annual R&D spend over the past years and expect this fraction not to deline in the next five years. It targets product and process innovations related to energy/resource efficiency and climate protection . Our total R&D expenses in 2022 were 2.3 billion Euro.

C10. Verification

C10.1

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

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

C10.1a

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

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Reasonable assurance

Attach the statement

KPMG Report.pdf

Page/ section reference
2, 3, 10, 12, 134, 135

Relevant standard
ISAE3000

Proportion of reported emissions verified (%)
100

C10.1b

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

Scope 2 approach

Scope 2 location-based

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Reasonable assurance

Attach the statement

KPMG Report.pdf

Page/ section reference
2, 3, 10, 12, 134, 135

Relevant standard
ISAE3000

Proportion of reported emissions verified (%)
100

Scope 2 approach
Scope 2 market-based

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Reasonable assurance

Attach the statement

KPMG Report.pdf

Page/ section reference
2, 3, 10, 12, 134, 135

Relevant standard
ISAE3000

Proportion of reported emissions verified (%)
100

C10.1c

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

Scope 3 category

Scope 3: Purchased goods and services
Scope 3: Capital goods
Scope 3: Fuel and energy-related activities (not included in Scopes 1 or 2)
Scope 3: Upstream transportation and distribution
Scope 3: Waste generated in operations
Scope 3: Business travel
Scope 3: Employee commuting
Scope 3: Upstream leased assets
Scope 3: Investments
Scope 3: Downstream transportation and distribution
Scope 3: Use of sold products
Scope 3: End-of-life treatment of sold products
Scope 3: Downstream leased assets

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Reasonable assurance

Attach the statement

KPMG Report.pdf

Page/section reference

2, 3, 10, 12, 134, 135

Relevant standard

ISAE3000

Proportion of reported emissions verified (%)

100

C10.2

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

Yes

C10.2a

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

Disclosure module verification relates to	Data verified	Verification standard	Please explain
C4. Targets and performance	Progress against emissions reduction target	ISAE 3000	The data point is published in our integrated annual report. All sustainability-related performance information in the “BASF Report 2022" according to the GRI Standards (“Comprehensive“ application option) was subject to the assurance engagement. This is also publicly published here: https://report.basf.com/2022/en/, +++ Reference to CDP question number: C4.1a +++ Type of verification and frequency: reasonable assurance, annual process
C6. Emissions data	Year on year emissions intensity figure	ISAE 3410, ISAE 3000	The data point is published in our integrated annual report. All sustainability-related performance information in the “BASF Report 2022" according to the GRI Standards (“Comprehensive“ application option) was subject to the assurance engagement. This is also publicly published here: https://report.basf.com/2022/en/, +++ Reference to CDP question number: C6.10 +++ Type of verification and frequency: limited assurance, annual process
C7. Emissions breakdown	Year on year change in emissions (Scope 1 and 2)	ISAE 3000	The data point is published in our integrated annual report. All sustainability-related performance information in the “BASF Report 2022" according to the GRI Standards (“Comprehensive“ application option) was subject to the assurance engagement. This is also publicly published here: https://report.basf.com/2022/en/, +++ Reference to CDP question number: C7.9 +++ Type of verification and frequency: reasonable assurance, annual process
C8. Energy	Energy consumption	ISAE 3410, ISAE 3000	The data point is published in our integrated annual report. All sustainability-related performance information in the “BASF Report 2022" according to the GRI Standards (“Comprehensive“ application option) was subject to the assurance engagement. This is also publicly published here:

			https://report.basf.com/2022/en/, +++ Reference to CDP question number: C8.2a +++ Type of verification and frequency: limited assurance, annual process

C11. Carbon pricing

C11.1

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

Yes

C11.1a

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

Denmark carbon tax
EU ETS
Germany ETS
Korea ETS
Shanghai pilot ETS
Switzerland carbon tax
Switzerland ETS
UK ETS

C11.1b

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

EU ETS

% of Scope 1 emissions covered by the ETS

55.8

% of Scope 2 emissions covered by the ETS

0

Period start date

January 1, 2022

Period end date

December 31, 2022

Allowances allocated

10,231,924

Allowances purchased

0

Verified Scope 1 emissions in metric tons CO2e

9,993,910

Verified Scope 2 emissions in metric tons CO2e

0

Details of ownership

Facilities we own and operate

Comment

Some parts of our operations receive energy from internal distribution grids fed by our own energy generation as well as imported energy, i.e. the exact source of energy cannot be attributed correctly. Therefore, we are not able to separate Scope 1 and Scope 2 for our emissions relevant under the ETS and report all emissions under Scope 1. Further, note that following the rules of the EU ETS, verified emissions include emissions from carbon capture and utilization step within the ammonia value chain. Such emissions are not relevant under Scope 1 according to the GHG Protocol standard and were excluded for calculation of the share of Scope 1 emissions covered by the ETS.

Germany ETS

% of Scope 1 emissions covered by the ETS

0.8

% of Scope 2 emissions covered by the ETS

0

Period start date

January 1, 2022

Period end date

December 31, 2022

Allowances allocated

0

Allowances purchased

132,000

Verified Scope 1 emissions in metric tons CO2e

132,000

Verified Scope 2 emissions in metric tons CO2e

0

Details of ownership

Facilities we own and operate

Comment

Estimate for 2022 based on 2021 figures for our sites at Ludwigshafen and Lampertheim and their demand in fossil energy carriers.

Korea ETS

% of Scope 1 emissions covered by the ETS

2.4

% of Scope 2 emissions covered by the ETS

9.4

Period start date

January 1, 2022

Period end date

December 31, 2022

Allowances allocated

671,667

Allowances purchased

0

Verified Scope 1 emissions in metric tons CO2e

399,376

Verified Scope 2 emissions in metric tons CO2e

246,751

Details of ownership

Facilities we own and operate

Comment

Shanghai pilot ETS

% of Scope 1 emissions covered by the ETS

1.9

% of Scope 2 emissions covered by the ETS

22.1

Period start date

January 1, 2022

Period end date

December 31, 2022

Allowances allocated

876,736

Allowances purchased

17,000

Verified Scope 1 emissions in metric tons CO2e

314,766

Verified Scope 2 emissions in metric tons CO2e

581,282

Details of ownership

Facilities we own and operate

Comment

For Shanghai Pilot ETS, there are 2 types of emission. One is Direct Emission, the other is Indirect Emission.
In this report, Scope1 is Direct emission, however, Waste disposal (belong to Scope 3) is classified as Direct Emission as well.

Switzerland ETS

% of Scope 1 emissions covered by the ETS

0.1

% of Scope 2 emissions covered by the ETS

0

Period start date

January 1, 2022

Period end date

December 31, 2022

Allowances allocated

30,781

Allowances purchased

3,500

Verified Scope 1 emissions in metric tons CO2e

16,818

Verified Scope 2 emissions in metric tons CO2e

0

Details of ownership

Facilities we own and operate

Comment

UK ETS

% of Scope 1 emissions covered by the ETS

0

% of Scope 2 emissions covered by the ETS

0

Period start date

January 1, 2022

Period end date

December 31, 2022

Allowances allocated

0

Allowances purchased

30

Verified Scope 1 emissions in metric tons CO2e

30

Verified Scope 2 emissions in metric tons CO2e

0

Details of ownership

Other, please specify

Aviation

Comment

New system, flights of board members.

C11.1c

(C11.1c) Complete the following table for each of the tax systems you are regulated by.

Denmark carbon tax

Period start date

January 31, 2022

Period end date

December 31, 2022

% of total Scope 1 emissions covered by tax

0

Total cost of tax paid

45,199

Comment

Switzerland carbon tax

Period start date
January 1, 2022

Period end date
December 31, 2022

% of total Scope 1 emissions covered by tax
30.01

Total cost of tax paid
241,544

Comment

C11.1d

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

Strategy for compliance:

(1) We strive to constantly reduce our GHG emissions in the most cost-efficient way in order to reduce our exposure under the various systems.
(2) We continuously evaluate the current and future status of our relevant GHG emissions in relation to the compliance status. We purchase allowances or plan such purchases in case of (projected) exceeding of allocated allowances. We factor the respective costs into our financial planning process and Enterprise Risk Management.

Application of strategy:

(1) Emission reduction: We set climate protection goals for 2030 and 2050 and adopted comprehensive carbon management with five strategic levers to achieve these goals. The carbon management applies globally and thus also affects the sites and plants regulated by carbon pricing systems, which set up their site-specific reduction strategies in line with BASF's global ambition and timeline, leading to lower exposure to the carbon pricing systems over time. For example, our site in Antwerp (subject to the EU ETS)[CJ1] plans to reduce emissions significantly mainly via switching to renewable energy and investing in one of the largest carbon capture and storage projects under the North Sea in the future. Besides, allowance and emission relevant efficiency measures are continuously implemented. In the Antwerp Steamcracker loss of hydrocarbons through flaring is now prevented. This measure, effective for the first time in 2022, saved 10000 t of CO2 in the reporting year.
(2) Evaluation of compliance status: We established regional expert teams for the carbon pricing systems in Europe and Asia, which continuously monitor BASF's compliance status in close operation with site and plant managers, and coordinate cost-optimized purchase of allowances. The teams also play a key role in the analysis of short-term to long-term developments in the different carbon pricing systems. They are supported by site/plant

managers, by corporate experts for the emission reduction levers, as well as experts for regional and local advocacy trends. The assessments are conducted at least annually and include considerations on potential carbon price developments in the various schemes. The results are included in the financial planning process and Enterprise Risk Management.

C11.2

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

No

C11.3

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

Yes

C11.3a

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

Type of internal carbon price

Shadow price

How the price is determined

Other, please specify

The internal price is determined via scenario analysis by global procurement under consideration of input from several internal stakeholders, e.g. technical and governmental affairs experts assessing the latest regulatory trends.

Objective(s) for implementing this internal carbon price

Navigate GHG regulations

Stress test investments

Scope(s) covered

Scope 1

Scope 2

Pricing approach used – spatial variance

Other, please specify

Differentiated, evolutionary pricing driven by the specific assessment, e.g. geography and timeframe of an investment.

Pricing approach used – temporal variance

Other, please specify

Differentiated, evolutionary pricing driven by the specific assessment, e.g. geography and timeframe of an investment.

Indicate how you expect the price to change over time

Actual price(s) used – minimum (currency as specified in C0.4 per metric ton CO2e)

5

Actual price(s) used – maximum (currency as specified in C0.4 per metric ton CO2e)

400

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

Capital expenditure

Operations

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

Yes, for some decision-making processes, please specify

Assessment of capital investment projects

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

Carbon pricing is considered in internal assessments of capital investment projects. BASF has set up a structured process to evaluate investment projects (e.g. capital expenditures, acquisitions), including impacts on the environment (e.g. climate) and respective costs. The process considers a project base case as well as the option to assess alternative scenarios. Carbon pricing can be attributed to any case depending on strategic goals as well as the expected likelihood and magnitude of impact. In this way, it directly affects the evaluation of economic viability of the capital expenditure business case. The focus of carbon pricing is on direct emissions (Scope 1), but since we are part of an energy-intensive industry and purchase of energy is significant, related cost effects on energy supply side (Scope 2) may be taken into account where relevant. The price of carbon considered depends on various factors driven by the specific assessment, e.g. geography and timeframe of an investment. Sometimes, several pricing scenarios may be used to evaluate uncertainties in future regulatory environments. The internal price is combined of two components: (a) a basic price driven by existing and upcoming regulation, which is determined via scenario analysis by global procurement under consideration of input from several internal stakeholders, (e.g. technical and governmental affairs experts assessing latest regulatory trends), (b) a strategic premium to foster internal climate action, determined by the economic evaluations group.

Type of internal carbon price

Shadow price

How the price is determined

Other, please specify

Carbon price within Value Based Alliance has been derived based on a meta-analysis of the recent social cost of carbon estimates. Single social cost of carbon

applied to all locations globally as cost is independent of location of emission source.

Objective(s) for implementing this internal carbon price

Other, please specify

BASF joined initiative VBA, a non-profit organization of multi-national companies to assess company's impacts on nature, society, and the economy along the value chain to measure and compare the value that our business makes to society.

Scope(s) covered

Scope 1
Scope 2
Scope 3 (upstream)
Scope 3 (downstream)

Pricing approach used – spatial variance

Uniform

Pricing approach used – temporal variance

Static

The carbon price should increase over time. For now, this is not depicted in the VBA monetization in the pilot phase. The temporal variance, i.e. the price increase is a topic to be treated in possible future methodology updates.

Indicate how you expect the price to change over time

Actual price(s) used – minimum (currency as specified in C0.4 per metric ton CO2e)

94

Actual price(s) used – maximum (currency as specified in C0.4 per metric ton CO2e)

94

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

Other, please specify

External direct and indirect suppliers, BASF own operations, direct customer industries

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

No

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

The monetary valuation of GHG emissions through carbon pricing is one component of the Value Balancing Alliance approach of reflecting the social cost of carbon (SCC). The SCC is most widely accepted approach in the literature, and it is also used by policy

makers. It provides an estimate, in USD, of the economic damages that would result from emitting one additional ton of GHGs into the atmosphere. The SCC puts the effects of climate change into economic terms and, thereby, helps policy makers and other decision-makers to understand the economic impacts of decisions that will increase or decrease emissions.
RFF (Resources for the Future is an independent, a non-profit research institution in Washington, DC.)'s Social Cost of Carbon Initiative has gathered a team of distinguished economists and scientists to improve the science behind SCC estimates (including projections for economic growth, population and emissions as well as climate models and damage functions). This is an ongoing process. VBA's partnership with RFF helps ensure that our SCC value remains at the leading edge of academic research on the topic.
With VBA's carbon pricing method, we assess our relevant impacts along our entire supply chain, our own operations, and our customer industries. The impacts of our products in their consumer use phase and end-of-life are covered case-by-case. These assessments improve the understanding of the relevance of specific economic, social and environmental impacts and their interdependencies along the different levels of our value chain. This transparency supports the integrated character of our actions, contributing to BASF's long-term success. The results enable us to monitor progress over time in a comprehensive way in monetary terms from a macro-perspective, demonstrate our value contribution, and take better informed decisions regarding the relevance of various business impacts by adding a macro-societal, integrated financial and non-financial perspective.

C12. Engagement

C12.1

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

Yes, our suppliers
Yes, our customers/clients
Yes, other partners in the value chain

C12.1a

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

Type of engagement

Engagement & incentivization (changing supplier behavior)

Details of engagement

Climate change performance is featured in supplier awards scheme

% of suppliers by number

11

% total procurement spend (direct and indirect)

61

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

Rationale for the coverage of your engagement

With the Together for Sustainability (TfS) initiative, suppliers are evaluated by independent experts either in on-site audits or online assessments. The latter are conducted by EcoVadis, a ratings agency specialized in evaluating suppliers' sustainability performance, including greenhouse gas emissions, energy use and certifications. In 2022 8,386 online assessments were performed by the TfS members. BASF is engaged in the further development of TfS, for example, in activities to standardize the calculation of scope 3 greenhouse gas emissions in the supply chain. In 2022, we were involved in the creation of new TfS recommendations for determining supply chain emissions to improve reporting transparency and consistency across the industry. We launched our global Supplier CO2 Management Program in 2021. Since then, we have requested the PCFs of our raw materials and support our suppliers in determining these. In a second step, we want to work with our suppliers on solutions to reduce product-related emissions and establish the PCF as a criterion for purchasing decisions.

RATIONALE FOR COVERAGE

Due to our large number of suppliers (>70,000), they are evaluated based on risk (i.e., country and industry-specific risks and materiality of supply relationship). We also use observations from our employees in procurement and information from internal/ external databases, such as the TfS initiative. Our third-party evaluations are therefore focused on the most relevant suppliers, which are Tier 1 suppliers showing an elevated sustainability risk potential as identified by our risk matrices, purchasers' assessments, or other sources. By 2025, we aim to have conducted sustainability evaluations for 90% of the BASF Group's relevant spend (=procurement spend with relevant suppliers). We also aim to have 80% of suppliers improve their sustainability performance upon re-evaluation by 2025. In 2022, 85% of the relevant spend had been evaluated and of the suppliers re-evaluated, 76% had improved. Both global targets are embedded in the target agreements of persons responsible for procurement. Out of the total number of suppliers in our portfolio in 2022, 11% had a valid sustainability evaluation. This is a coverage of 61% of spend, out of the total spend we had with these suppliers in 2022.

Impact of engagement, including measures of success

BASF collaborates with suppliers to promote adequate emissions management and reductions. We have already asked more than 1,300 suppliers about the PCFs of our raw materials (i.e., 60% of raw materials-related GHG emissions vs. 50% in 2021).
IMPACT OF SUPPLIER ENGAGEMENT STRATEGY
When engaging with suppliers, BASF also considers their sustainability performance, using i.a. EcoVadis. The scores in our EcoVadis assessments can be positively influenced by, e.g., reporting on energy use or greenhouse gas (GHG) emission reductions. In 2022, 47% of assessed suppliers reported on energy use and GHG

emissions (40% in 2021), 38% claimed to be using renewable energy (30% in 2021) and 19% were CDP respondents (15% in 2021). In addition, 14% reported on scope 3 GHG emissions (10% in 2021) and 10% had an ISO 50001 certification (energy management). Nearly 10% of assessed suppliers were part of the SBTi. In addition, buyers are encouraged and trained to consider available evaluation results into awarding processes and business decisions. In some purchasing regions, we have already started to offer financial incentives for suppliers who perform well in their emissions management, amongst other sustainability aspects.
Another positive example is a project with BASF China's service provider for waste incineration which treats waste and off gas and supplies steam and water condensate to the BASF sites located in Shanghai. A joint optimization project run in 2022 has led to 45% less amount of natural gas required by the supplier's facility for process regulation, with the subsequent reduction of CO2 emissions.
MEASURE OF SUCCESS
a) share of relevant spend we cover with evaluations (status 2022: 85%), and
b) percentage of evaluated suppliers that improve their sustainability performance upon re-evaluation (status 2022: 76%). These indicators are part of the company targets.
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). We also aim to have 80% of suppliers improve their sustainability performance upon re-evaluation by 2025. Both global targets are embedded in the target agreements of persons responsible for procurement. When elaborating a procurement strategy, buyers are required to consider potential threats and opportunities related to climate change.

Comment

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

C12.1b

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

Type of engagement & Details of engagement

Education/information sharing
Share information about your products and relevant certification schemes (i.e. Energy STAR)

% of customers by number

100

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

0

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

SCOPE OF ENGAGEMENT

To increase transparency on the emission intensity of our products for our customers, we developed a digital, externally certified solution to calculate product carbon footprints (PCF) for almost the entire portfolio of BASF's around 45,000 sales products in line with international standards (ISO 14044, ISO 14067, TfS Guideline for PCFs for the chemical industry and GHG Protocol Product Standard). The tool enables BASF to provide PCFs for its global portfolio. Customers (on request) receive valuable information about the extent to which BASF materials contribute to the carbon footprint of their business activities and their own final products. Some operating divisions actively engage with customers by offering webinars about the use and comparison of PCFs, others offer additional tools, e.g., for considering transport to the customer. Already today we offer our customers added value through the use of alternative raw materials. In this way, we help to reduce the carbon footprint of their products.

One example is BASF's biomass balance approach, in which fossil resources are replaced by renewable raw materials from organic waste and vegetable oils in the production Verbund and allocated to the sales product. Another example of the application of the mass balance approach is the ChemCyclingTM project.

We also started to make the automated PCF calculation approach available to interested industry players. As a first step, IT companies will be able to translate BASF's methodology and in-house solution into marketable software through licensing agreements. For example, such agreements have been established with Atos, iPoint or sphera.

RATIONALE FOR COVERAGE

We set coverage of 100% as we consider the PCFs to be a relevant offer for essentially our entire customer base of more than 80,000 companies in view of the increasing demand for CO2 transparency in the supply chain. For example, a growing number of companies require Scope 3 upstream data driven by commitments for science-based targets. *Note regarding % Scope 3 emissions: A value of zero is given because in line with current reporting standards BASF does not calculate and report GHG emissions from the processing of sold products, which would be one relevant Scope 3 category in this context.

Impact of engagement, including measures of success

IMPACT OF ENGAGEMENT

BASF strengthens the relationship with the customer by demonstrating credibility and know-how on climate-related topics as well as offering innovative solutions. The transparency of our PCFs enables us to target our CO2 reduction measures to those areas where our customers can later achieve the greatest value added from lower carbon emissions in the value chain, i.e., we are able to offer tailored low-carbon solutions. In 2022, we further expanded our portfolio of products with a certified reduced carbon footprint, including engineering plastics and polyurethanes, intermediates and aroma ingredients. Such kinds of offers are of growing importance in many of our customer industries. Almost half of the top 20 companies in the BASF-relevant Fast-Moving Consumer Goods, Apparel, Automotive, Electronics, and Packaging industries have defined Scope 3 emission reduction targets.

MEASURES OF SUCCESS
(1) The marketing of reduced PCF solutions based on a fully PCF-transparent product portfolio is still at an early stage, but the turnover with such kinds of products is expected to become an important measure of success for our business units.
(2) At BASF Group level, we measure the success of products with a substantial sustainability contribution in the value chain (including reduction of GHG emissions and improving energy efficiency), by their total annual sales. We already reached our 2025 sales target of €22 billion for so-called Accelerator products in 2021. That is why we are updating our methodology and our product portfolio steering target (and KPI respectively) and will introduce a revised method in 2023.
(3) Finally, we use qualitative feedback from our customers through the CDP Supply Chain Program and their supplier performance reviews to measure the impact of our activities.

THRESHOLD FOR SUCCESS
The main indicator for success from a BASF Group perspective is total annual sales with Accelerator products, which are benchmarked against a respective target. We already reached our 2025 Accelerator sales target of €22 billion in 2021, i.e. the threshold for success. The Sustainable Solution Steering (Triple S) method for portfolio steering was revised in 2022 and is currently being implemented in the operation divisions. Our goal is to have segmented enough products by the end of 2023 to define a new KPI and report on it for 2023

C12.1d

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

BASF cooperates with numerous other partners in the value chain, besides suppliers and customers. Among these are industry peers, specialized partners, as well as businesses sharing common interests at individual BASF production sites to promote specific emission reduction technologies. Our strategy for engagement derives from the five strategic levers for reducing our GHG emissions (grey-to-green energy, power-to-steam, new technologies, bio-based feedstocks, and continuous operational excellence), which are operationalized by a range of projects on the corporate and site level. BASF continuously investigates which projects can contribute best to the individual levers and how – including a review of options to enter partnerships for increasing the likelihood of success of a project. Based on this analysis, partnerships with the best cost-benefit profile are prioritized and developed strategically.

MEASURES OF SUCCESS
Each project follows specific milestones, e.g., reaching a certain technology maturity level after a dedicated time period, and success will be assessed based on milestone achievement.

EXAMPLES
(1) We are a member of the Antwerp@C consortium (consisting of Air Liquide, BASF, Borealis, ExxonMobil, INEOS, Fluxys, Port of Antwerp, Total) in the Port of Antwerp where BASF operates a large chemical Verbund site. Case study (STAR approach): Situation: The Port of Antwerp is one of the largest integrated energy and chemicals clusters in Europe and the port

management seeks new ways to collaborate on GHG emissions reduction. Task: Engage companies at the port to investigate joint options for emissions reduction. Action: End of 2019, Port of Antwerp brought seven leading chemical and energy companies together in the Antwerp@C consortium to work on a feasibility study evaluating carbon capture storage (CCS) installation, which was granted funding by the EU in 2020. Result: In 2021, the consortium carried out the feasibility study and decided to move on to the next phase and start engineering studies. These will further investigate the construction of a central "backbone" throughout the port of Antwerp. The project has the potential to reduce the GHG emissions within the port by half until 2030.
(2) We joined forces with SABIC and Linde to realize the world's first electrically heated steam cracker furnace. The goal is to drive concepts and faster implementation through combined strengths where BASF and SABIC bring in extensive know-how and intellectual property in developing chemical processes as well as long-standing experience and knowledge in operating steam crackers, while Linde contributes through expertise and intellectual property in developing and building steam cracking furnace technologies and driving future industry commercialization. To develop and pilot the concept, we signed a cooperation agreement with SABIC and Linde in 2021 and jointly applied for funding to build a demonstration plant.
(3) We collaborate with Security Matters, Ltd, a company focused on digitizing physical objects on the blockchain to enable a circular and closed loop economy, to develop solutions for better plastics traceability and circularity. The cooperation aims to improve recycling infrastructures and performance properties and quality of recycled plastics in support of a circular economy.
(4) BASF and Magna, one of the world's largest suppliers in the automotive space and a BASF strategic customer, are partnering on Greentown Labs 'Go Move 2022, seeking to decarbonize the transportation industry. In the 'Go Move' initiative startups and corporates are brought together to accelerate the commercialization of technologies from electric vehicles to hydrogen refueling technologies, to automotive lightweighting innovations, and more. Idea submissions generally come from startups. BASF is crowdsourcing feedback from employees on the submissions.

C12.2

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

Yes, climate-related requirements are included in our supplier contracts

C12.2a

(C12.2a) Provide details of the climate-related requirements that suppliers have to meet as part of your organization's purchasing process and the compliance mechanisms in place.

Climate-related requirement

Climate-related disclosure through a non-public platform

Description of this climate related requirement

Our suppliers are evaluated based on risk (i.e., country and industry-specific risks and materiality of supply relationship). We also use observations from our procurement and information from databases, such as the Together for Sustainability initiative. The focus is on the standardization, simplification and mutual recognition of supplier audits and assessments. 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 evaluating suppliers' sustainability performance. Suppliers participating in an evaluation are required to answer climate-related questions. If supplier assessments identify deviations from standards, we ask to implement corrective measures within a reasonable time frame in a clearly defined follow-up process. Expectations towards suppliers are defined in our global Supplier Code of Conduct, which is integrated into our group-wide ordering systems and purchasing conditions. We review our suppliers' progress according to a defined time frame based on the sustainability risk identified, or after five years at the latest. In the case of serious violations of the standards & principles defined, we reserve the right to impose commercial sanctions. We support our suppliers in implementing our requirements, which include training, resources efficiently, energy-efficient technologies, reducing emissions to air, and minimizing negative impacts on climate change.

% suppliers by procurement spend that have to comply with this climate-related requirement

61

% suppliers by procurement spend in compliance with this climate-related requirement

100

Mechanisms for monitoring compliance with this climate-related requirement

On-site third-party verification

Supplier scorecard or rating

Response to supplier non-compliance with this climate-related requirement

Retain and engage

C12.3

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

Row 1

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

Yes, we engage directly with policy makers

Yes, our membership of/engagement with trade associations could influence policy, law, or regulation that may impact the climate

Yes, we fund organizations or individuals whose activities could influence policy, law, or regulation that may impact the climate

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

Yes

Attach commitment or position statement(s)

Attachment I: https://www.basf.com/global/en/who-we-are/politics/governance.html
Attachment II: https://www.basf.com/global/en/who-we-are/sustainability/we-produce-safely-and-efficiently/energy-and-climate-protection/energy-and-climate-policies.html

Energy and climate policies.pdf

Governance.pdf

Describe the process(es) your organization has in place to ensure that your external engagement activities are consistent with your climate commitments and/or climate transition plan

The Board of Directors decides on BASF's climate change strategies, taking thorough analysis by experts and practitioners at the working level into account. The heads of the Corporate Development unit and the Net Zero Accelerator project report to the Board of Directors and have the key position to ensure consistency of actions resulting from the decisions.

In our advocacy work, we act in compliance with our Global Code of Conduct, its core values and the rules and principles set out in our Policy on Government Relations and Advocacy. As associations act on behalf of their members, we ask them to apply the same principles.

We assure global alignment of our advocacy work and our activities in associations via established governance processes and internal networks that include all world regions. Direct climate policy-related corporate activities are mainly stipulated and performed by Energy and Climate Policy (Corporate Communications and Government Relations unit) and Sustainability Strategy (Corporate Development unit) organizations in BASF. Representatives have regular meetings (about monthly) with relevant BASF colleagues (e.g. experts in energy procurement, greenhouse gas reporting, BASF's energy efficiency unit, sustainability responsibles in business divisions). The corporate groups are connected to a network of BASF representatives with analogous functions globally, through email and web conference to receive regular updates. Taking into account developments in climate protection technologies and policies, we jointly agree on BASF’s positions and publish our common view on the company website. Our positions serve as a yardstick against which we and others measure our own and our industry group’s activities.

We regularly review the positions and activities on climate and energy policies of our major associations and publish our findings on the internet. If an association’s position on an issue that is core to BASF’s membership fundamentally deviates from BASF’s position or our principles and values, BASF increases its engagement in that association to improve alignment or to demand that the association stops advocating against our

interests or our values and principles. If no agreement can be found, an overarching assessment of the association's performance, positions, views and membership value regarding all issues relevant for BASF is performed. Based on this, a decision is taken on the future of our membership in this association.

C12.3a

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

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

EU ETS/CBAM: The EU ETS worked on the 'cap and trade' principle. A cap is set on the total amount of greenhouse gases that can be emitted by the installations covered by the system. It is reduced over time so that total emissions fall.
Within the cap, installations buy or receive emissions allowances, which they can trade with one another as needed. While in the past, sufficient free allocation of allowances safeguarded the international competitiveness of industrial sectors at risk of carbon leakage, a CBAM shall substitute this mechanism: Carbon costs at the border shall mirror EU ETS costs.

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

Carbon pricing, taxes, and subsidies

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

Emissions trading schemes

Policy, law, or regulation geographic coverage

Regional

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

Europe

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

Support with major exceptions

Description of engagement with policy makers

- We publish our position on our website and highlight our messages in the public and non-public discussion.
- Participation in public discussions on ETS and CBAM
- Direct meetings with MEPs, government, and European Commission
- Invitation of MEPs and state representatives to site visits
- Event in our Brussels office and presentation of our view
- Contribution to positioning papers and consultations (e.g. Cefic, VCI, BDI, BusinessEurope)

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

- New plants must be economically operable before the existing plants become unprofitable due to loss of carbon leakage (CL) protection.
- Free allocation and compensation for additional electricity costs must be fully maintained to protect against carbon leakage.
- Support of carbon-free installations (e,g, by contracts for difference) should be further strengthened to speed up the transition. ETS income should be fully used to support the transition of the sectors covered
- We oppose Carbon Border Adjustment Mechanisms as an alternative to ETS carbon leakage protection, as it cannot protect the chemical industry:
- WTO compatible export solutions are missing,
- Value chains are not covered and thus not protected from Carbon Leakage any longer.
- To include value chains, carbon footprinting calculations need to be globally harmonized

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

Yes, we have evaluated, and it is aligned

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

With the Green Deal, the European Commission is aiming to achieve climate neutrality in Europe by 2050. We support this ambition and have therefore introduced a Carbon Management R&D program to develop fundamentally new technologies to further reduce CO2 emissions. However, in order to successfully manage the transformation process and maintain global competitiveness, new production facilities must be economically operable before the existing plants become unprofitable due to rising carbon price burdens.
As there is no global level playing field yet - global CO2 pricing is not expected in the near future – carbon leakage protection still plays a major role and the CBAM cannot fully protect chemicals or conflicts with free trade. Free trade is essential for the success of export-oriented industries such as the chemical industry and trade law aspects also must be taken into consideration. Better solutions still need to be developed.

We therefore appreciate that the CBAM does not cover Organic Chemicals yet, as this would be detrimental for the transformation: High investments are needed which require ongoing profitability of European production sites. Remaining ETS free allocation, together with funding (EU and national), will allow for driving transformational projects further forward. It will avoid relocation of production and thus emissions to foreign countries (carbon leakage).

The E.U.'s approach of unilaterally pursuing a transformation to climate-neutral industry despite rising costs will only succeed in the long run if the costs of maintaining global competitiveness can be financed via the market. Reaching its Climate Targets via Carbon Leakage would be detrimental to positioning the EU as climate leader, thus weakening its position in climate diplomacy and as a role model for global industry transformation.

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

The revision of the EU Renewable Energy Directive aims at increasing the overall Renewable Energy Sources (RES) generation capacity. It further intends to foster cross-border RES supply and trading, and to strengthen joint projects and efforts between Member States. It is also aims to introduce a renewable fuel of nonbiological original target (RFNBO – “green H2”) for industry, with an overall intention to push the Member States ramping-up the power generation and electrolysis capacities in order to support the European climate ambitions. BASF fully supports the intention but is skeptical with regard to fix and technology specific RFNBO target.

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

Climate change mitigation

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

Renewable energy generation

Policy, law, or regulation geographic coverage

Regional

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

Europe

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

Support with minor exceptions

Description of engagement with policy makers

- We publish our position on hydrogen actively on our website and highlight our messages in the public and non-public discussion.
- Publicly available contribution to EU consultation
- Direct meetings with MEPs, Governments, and European Commission
- Invitation of MEPs and state representatives to site visits
- Event in our Brussels office and presentation of our view
- Contribution to positioning papers and consultations (e.g. Cefic, VCI, BDI, BusinessEurope)

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

BASF fully supports increasing availability and access to RES as an inevitable precondition for industry transformation. We also see a need to strengthen European cooperation in renewable energy trading and market integration of RES electricity. Member States strongly need to encourage subsidy-free investments into renewable energy generation.

Regulatory burdens on RES use for hydrogen production through requirements for additional quality features need to be avoided. Green power criteria must not hinder RES electrification.

Any hydrogen target for the industry needs to focus on encouraging the industry to

deploy options that reduce CO2 emissions of hydrogen production:
- Narrow criteria, such as a locality requirement, must not be applied for the ramp-up of hydrogen integration for essential feedstock use in cost-sensitive and trade-exposed industries.
- All climate-friendly hydrogen technologies must be accepted equally and counted towards any hydrogen target for the industrial sector.
- A general RFNBO target on the Member State level could even undermine planned CO2 reduction measures, as it does not reflect the different potentials available in various Member States and decreases attractiveness of investments in other technologies.

- A hydrogen target should focus on on-purpose hydrogen.
- By-product hydrogen, co-product hydrogen, and intrinsic hydrogen have technical and/or financial limitations for replacement.
- Policies need to be in place to address the economic gaps (e.g., CCfD).

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

Yes, we have evaluated, and it is aligned

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

BASF wants to achieve net zero emissions by 2050. To do so we develop emission-free technologies at industrial scale, which will replace fossil fuels such as natural gas with renewable electricity and zero and low-carbon hydrogen. Electricity demand at our major sites, including the headquarters in Ludwigshafen will therefore increase sharply in the coming decade. From around 2035, it is expected to be more than three times the current electricity demand. A precondition for the transformation of chemical production is therefore the reliable availability of large quantities of renewable electricity and hydrogen at competitive prices. Beside direct electrification where possible, the use of zero and low-carbon hydrogen play already an essential role, as hydrogen is primarily used as a raw material for chemical production. Feedstock hydrogen demand at our major German site currently amounts to ~ 240,000 metric tons per year. This makes BASF one of the of the largest producers and consumers of hydrogen in Germany. A central building block for further CO2 reductions is therefore the gradual substitution of this "grey" hydrogen by zero and low-carbon hydrogen. In addition, we expect new hydrogen applications (CCU, energy use) in the future and thus a trend toward increasing hydrogen demand. BASF therefore supports a rapid and economically feasible hydrogen ramp-up in Germany and Europe and is actively driving this forward. The projects for the local and near-consumer production of "green" (via electrolysis) and "turquoise" (via methane pyrolysis) hydrogen at the Ludwigshafen Verbund site are a building block in this regard. However, these projects have limits in terms of economic viability and availability (e.g., of electricity from renewable energies) and can therefore only cover a smaller part of future demand. Procurement via pipeline, on the other hand, will play a much more important role for the hydrogen supply. Against this background, we are very concerned about the 2030 "green" RNFBO target for industry in the RED III reform, which is to set a share of 42% of industrial consumption in 2030 for each EU

member state. In principle, we do not consider sub-targets/quotas as well as technology specific approaches, such as the specific focus on "green" hydrogen from electrolysis, to be a cost-effective way of CO avoidance.

C12.3b

(C12.3b) Provide details of the trade associations your organization is a member of, or engages with, which are likely to take a position on any policy, law or regulation that may impact the climate.

Trade association

European Chemical Industry Council (CEFIC)

Is your organization's position on climate change policy consistent with theirs?

Consistent

Has your organization attempted to influence their position in the reporting year?

Yes, we publicly promoted their current position

Describe how your organization's position is consistent with or differs from the trade association's position, and any actions taken to influence their position

CEFIC is committed to the Paris Agreement. It is convinced that, as one of the largest and most diversified industries in Europe, the chemical industry plays an important role in helping to achieve long-term greenhouse gas emission reductions. Therefore, it is continuously looking at ways to improve production processes, lower the industry's carbon footprint and enable further emission reductions down the value chains.
CEFIC supports the EU Green Deal and Europe's ambition to become climate neutral by 2050. Together with the EU Commission, and with support from its members including BASF, it worked on the Chemical Industry Transition Pathway.
A milestone moment for the European chemicals industry: The EU Chemical Industry Transition Pathway helps define the sector's path to 2050 - cefic.org

Funding figure your organization provided to this trade association in the reporting year (currency as selected in C0.4)

Describe the aim of your organization's funding

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

Trade association

Other, please specify

Verband der Chemischen Industrie e.V. (VCI)

Is your organization's position on climate change policy consistent with theirs?

Consistent

Has your organization attempted to influence their position in the reporting year?

Yes, we publicly promoted their current position

Describe how your organization's position is consistent with or differs from the trade association's position, and any actions taken to influence their position

VCI supports the Paris Agreement. In order to find ways and solutions towards climate-neutral chemical production in Germany, the VCI and the Association of German Engineers (VDI) launched the Chemistry4Climate (C4C) platform. A total of 80 stakeholders from industry, politics and civil society were represented at C4C. BASF has actively contributed with its technical expertise in all working groups. We support the results of the platform: Wie die Trans¬formation der Chemie gelingt | VCI

These results deliver input for VCIs positioning in recent discussions: It shows that greenhouse gas-neutral chemistry is technically possible, but it comes with numerous prerequisites. Above all, large amounts of renewable electricity at competitive prices are needed, as well as sufficient availability of green hydrogen. Furthermore, new sources of carbon must be mobilized for material use if fossil fuels are largely eliminated. Only then will the investments in the new technologies come about.

Funding figure your organization provided to this trade association in the reporting year (currency as selected in C0.4)

Describe the aim of your organization's funding

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

C12.3c

(C12.3c) Provide details of the funding you provided to other organizations or individuals in the reporting year whose activities could influence policy, law, or regulation that may impact the climate.

Type of organization or individual

Non-Governmental Organization (NGO) or charitable organization

State the organization or individual to which you provided funding

Forum für Zukunftsenergien or in English, "Forum for Future Energies" is the Institution for the Energy Sector and Energy Policies for pre-parliamentary debates. It serves as a platform for information and communication on the design of a sustainable energy industry in an interdisciplinary, cross-industry, and cross-interest discourse both on a national level in Berlin and on an international level in Brussels.

Funding figure your organization provided to this organization or individual in the reporting year (currency as selected in C0.4)

3,993

Describe the aim of this funding and how it could influence policy, law or regulation that may impact the climate

Renewable Energy at competitive costs is essential for BASFs Climate Strategy. The Forum for Future Energies is committed to a secure, cost-effective, resource- and environmentally-friendly energy supply for all sectors. It promotes the exchange of experience between science, business, administration, and politics to allow for science-based, broadly agreed solutions. It facilitates discussions in political processes and supports objectification of the debate as well as consensus building. The focus includes information to the public, experts, and energy policymakers through publications, lectures, discussion events or conferences.
Type of funding: membership fee, participation in events, written contributions

Have you evaluated whether this funding is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

C12.4

(C12.4) Have you published information about your organization's response to climate change and GHG emissions performance for this reporting year in places other than in your CDP response? If so, please attach the publication(s).

Publication

In mainstream reports, incorporating the TCFD recommendations

Status

Complete

Attach the document

Energy and Climate Protection.pdf
entire-basf-ar22.pdf

Page/Section reference

p. 19 (TCFD Recommendations index);
p. 26-30 (“Our Strategy”);
p. 35-36 (“Targets and Target Achievement");
p. 41-42 (“Our Steering Concept”);
p. 45-48 (“Our Sustainability Concept”);
p. 95-98 (“E.U. Taxonomy”)
p. 1114-116 (“We Source Responsibly”);
p. 1135-141 (“Energy and climate protection”);
p. 147-150 (“Biodiversity”)
p. 157-167 (“Opportunities and Risks”)

Content elements

Governance
Strategy
Risks & opportunities
Emissions figures
Emission targets
Other metrics
Other, please specify
Value chain engagement

Comment

Publication

In voluntary communications

Status

Complete

Attach the document

Energy and Climate Protection.pdf

Page/Section reference

Entire document

Content elements

Governance
Strategy
Risks & opportunities
Emissions figures
Emission targets
Other metrics
Other, please specify
Value chain engagement

Comment

This is the overview page of our website section on Energy and Climate Protection, which features nine sub-sections in total.

C12.5

(C12.5) Indicate the collaborative frameworks, initiatives and/or commitments related to environmental issues for which you are a signatory/member.

	Environmental collaborative framework, initiative and/or commitment	Describe your organization's role within each framework, initiative and/or commitment
Row 1	Mission Possible Partnership Task Force on Climate-related Financial Disclosures (TCFD) UN Global Compact World Business Council for Sustainable Development (WBCSD)	Mission Possible Partnership (subgroup LCET) BASF is member of LCET (Low Carbon Emitting Technologies) initiative. LCET is part of the Mission Possible Partnership. The LCET initiative is accelerating the development and upscaling of low-emissions technologies for chemical production through the development of intra-industry, cross-industry, and public-private collaboration on pilot projects for prioritized technologies. Task Force on Climate-related Financial Disclosures (TCFD) BASF supports TCFD recommendations since November 2018 "By publicly declaring support for the TCFD and its recommendations, companies demonstrate that they are taking action to build a more resilient financial system through climate-related disclosure. Become a supporter by clicking on the link below and completing the Statement of Support form. A TCFD representative will reach out to you if you have further questions or if we need to confirm information." [1] https://www.fsb-tcfd.org/support-tcfd/ UN Global Compact BASF actively supports the UN Global Compact, a voluntary initiative based on company commitments to implement universal sustainability principles and to advance UN goals such as the Sustainable Development Goals (SDGs). World Business Council for Sustainable Development (WBCSD) BASF is a member of the World Business Council for Sustainable Development (WBCSD) and supports the Chemicals Group in different areas.

C15. Biodiversity

C15.1

(C15.1) Is there board-level oversight and/or executive management-level responsibility for biodiversity-related issues within your organization?

	Board-level oversight and/or executive management-level responsibility for biodiversity-related issues	Description of oversight and objectives relating to biodiversity
Row 1	Yes, both board-level oversight and executive management-level responsibility	Corporate-wide governance in terms of steering and controlling BASF Group and ensuring corporate compliance is the overall responsibility of the Board of Executive Directors as a whole. The Corporate Center supports the Board of Executive Directors in steering the company and defining adequate governance. The Corporate Center bundles all group-wide steering and governance activities. Governance topics accountable within Corporate Center are also biodiversity-related topics e.g., Environmental protection, EHSQ management system, EHS Data management & reporting. Managing Directors are accountable for the compliance of the individual legal entities. This includes adherence to local laws, and local implementation of group-wide Policies and Corporate Requirements, complemented by local Company Requirements if and to the extent needed.

C15.2

(C15.2) Has your organization made a public commitment and/or endorsed any initiatives related to biodiversity?

	Indicate whether your organization made a public commitment or endorsed any initiatives related to biodiversity	Biodiversity-related public commitments	Initiatives endorsed
Row 1	Yes, we have made public commitments and publicly endorsed initiatives related to biodiversity	Commitment to no conversion of High Conservation Value areas Commitment to secure Free, Prior and Informed Consent (FPIC) of Indigenous Peoples	Other, please specify VBA Value balancing Alliance

C15.3

(C15.3) Does your organization assess the impacts and dependencies of its value chain on biodiversity?

Impacts on biodiversity

Indicate whether your organization undertakes this type of assessment

Yes

Value chain stage(s) covered

Direct operations
Upstream
Downstream

Tools and methods to assess impacts and/or dependencies on biodiversity

IBAT – Integrated Biodiversity Assessment Tool
STAR – Species Threat Abatement and Restoration metric
TNFD – Taskforce on Nature-related Financial Disclosures

Please explain how the tools and methods are implemented and provide an indication of the associated outcome(s)

IBAT: Conservation areas play a valuable role in preserving biodiversity and natural habitats. In 2021, BASF added an indicator to their environmental database: proximity of production site to internationally recognized protected areas. The implementation of IBAT allowed BASF to raise awareness of biodiversity at local level and assess and, if necessary, reduce potential impacts of production sites on these areas. In 2022, 5% of the company´s sites were adjacent to a Ramsar site and 1% were adjacent to a category I, II or III protected area as defined by the International Union for Conservation of Nature. Furthermore, none of the production sites were adjacent to a UNESCO protected area.

STAR: This tool is part of IBAT and it is based on the IUCN Red List of Threatened Species. STAR combines data on species, the threats they face, and their risk of extinction to assess the conservation status of species. In 2022, BASF conducted an analysis and only a few production sites are located in areas with high or very high STAR values. For these areas, the company has taken a special look at the threats to which the species are exposed with the result, that BASF has low or no influence on the vast majority of these threats, such as tourism, invasive non-native/alien species/diseases and fishing & harvesting aquatic resources.

TNFD: The Taskforce on Nature-related Financial Disclosures (TNFD) is working to provide a framework for reporting on nature-related risks and related activities. In 2021, BASF joined the newly established TNFD Forum, a consultative network, to support this development. Engaging in ongoing dialog with a variety of stakeholders is important to BASF. That is why the company seeks out partnerships with relevant interest groups and organizations worldwide to raise awareness of biodiversity and drive forward the action needed to preserve natural habitats. This enables BASF to firstly share the

knowledge gained from biodiversity activities and secondly learn from others to improve individual practices.

Dependencies on biodiversity

Indicate whether your organization undertakes this type of assessment

C15.4

(C15.4) Does your organization have activities located in or near to biodiversity-sensitive areas in the reporting year?

Yes

C15.4a

(C15.4a) Provide details of your organization's activities in the reporting year located in or near to biodiversity -sensitive areas.

Classification of biodiversity -sensitive area

Other biodiversity sensitive area, please specify

Ramsar & IUCN I.II.III

Country/area

Name of the biodiversity-sensitive area

Site adjacent to an IUCN protected area of category I, II or III
Site adjacent to an Ramsar sites

Sites: Malaysia
Ramsar sites: Belgium, Mexico, USA, Great Britain, Netherlands, Germany, Ireland, France

Proximity

Adjacent

Briefly describe your organization's activities in the reporting year located in or near to the selected area

BASF supplies products and services to around 90,000 customers. These products are produced in plants at large sites (Verbund sites) as well as at smaller sites.
BASF produces a wide range of chemicals such as solvents, amines, resins, glues, electronic-grade chemicals, industrial gases, basic petrochemicals, polymers or inorganic chemicals.

Indicate whether any of your organization's activities located in or near to the selected area could negatively affect biodiversity

Yes, but mitigation measures have been implemented

Mitigation measures implemented within the selected area

Site selection
Project design
Scheduling
Physical controls
Operational controls
Abatement controls
Restoration
Biodiversity offsets
Other, please specify
Emission reduction measures

Explain how your organization's activities located in or near to the selected area could negatively affect biodiversity, how this was assessed, and describe any mitigation measures implemented

There is a potential risk that protected areas are affected by emissions of our chemical production plants. To reduce this risk, we are regularly monitoring and assessing our emissions to air and water as part of our environmental management.
The objective: continuous improvement in the areas of environmental protection, health and safety is part of BASF's commitment to Reponsible Care, a voluntary initiative of the chemical industry. We implemented a Responsible Care Management System as early as 2007, which applies to all companies in the BASF Group. We want to minimize the impact of our operations on people and the environment and improve continuously our environmental performance. We act responsibly and protect the environment by reducing emissions and waste.

C15.5

(C15.5) What actions has your organization taken in the reporting year to progress your biodiversity-related commitments?

	Have you taken any actions in the reporting period to progress your biodiversity-related commitments?	Type of action taken to progress biodiversity- related commitments
Row 1	Yes, we are taking actions to progress our biodiversity-related commitments	Land/water protection Land/water management

C15.6

(C15.6) Does your organization use biodiversity indicators to monitor performance across its activities?

	Does your organization use indicators to monitor biodiversity performance?	Indicators used to monitor biodiversity performance
Row 1	Yes, we use indicators	Pressure indicators Response indicators

C15.7

(C15.7) Have you published information about your organization's response to biodiversity-related issues for this reporting year in places other than in your CDP response? If so, please attach the publication(s).

Report type	Content elements	Attach the document and indicate where in the document the relevant biodiversity information is located
In voluntary sustainability report or other voluntary communications	Content of biodiversity-related policies or commitments Governance Impacts on biodiversity Details on biodiversity indicators	Complete document 1, 2
In mainstream financial reports	Content of biodiversity-related policies or commitments Governance Impacts on biodiversity Details on biodiversity indicators	Pages 46, 97 - 99, 118, 147–150 3

[1]BASF again achieves its Palm Commitment_ 100 percent RSPO-certified palm (kernel) oil sourced in 2021.pdf

[2]6th-BASF_Palm-Progress-Report_2021.pdf

[3]entire-basf-ar22.pdf

C16. Signoff

C-FI

(C-FI) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.

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C16.1

(C16.1) Provide details for the person that has signed off (approved) your CDP climate change response.

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