Welcome to your CDP Climate Change Questionnaire 2021

C0. Introduction

C0.1

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

At BASF, we create chemistry for a sustainable future. We combine economic success with environmental protection and social responsibility. Approx. 110,000 employees in the BASF Group work on contributing to the success of our customers in nearly all sectors and almost every country in the world.

BASF's activities are grouped into six segments: Chemicals, Materials, Industrial Solutions, Surface Technologies, Nutrition & Care and Agricultural Solutions. In 2020, BASF posted sales of €59.2 billion and income from operations before special items of approx. €3.6 billion. BASF shares are traded on the stock exchange in Frankfurt (BAS) and as American Depositary Receipts (BASFY) in the U.S. Further information on BASF is available at www.basf.com.

We carry out our corporate purpose, "We create chemistry for a sustainable future", by pursuing ambitious goals along our entire value chain. In this way, we aim to achieve profitable growth and take on social and environmental responsibility. Our products, solutions and technologies contribute to achieving the United Nations' Sustainable Development Goals (SDGs), for example, on sustainable consumption and production, climate action or fighting hunger. We are committed to contributing to the Paris climate agreement and support the recommendations of the Task Force for Climate-related Financial Disclosure (TCFD).

We have defined sustainability focus areas in our corporate strategy to position ourselves in the market while meeting the growing challenges along the value chain: We source responsibly; We produce safely for people and environment; We produce efficiently; We value people and treat them with respect; We drive sustainable products and solutions.

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

Since 1990, we have been able to lower our overall greenhouse gas (GHG) emissions from chemical operations by 48.1% and reduce specific emissions by 72.1%. In March 2021, we set new ambitious climate goals: We raised our medium-term 2030 target from CO2-neutral growth to reducing our global GHG emissions by 25 percent compared with 2018 – despite targeted growth and construction of a large Verbund site in South China. Further, we want to achieve net zero emissions by 2050. We bundled all measures that will help us reach our 2030 climate target and enable further reductions in the long term in a global Carbon Management. At the heart of the long-term transition toward net zero emissions by 2050 is the use of new technologies, which will replace fossil fuels such as natural gas with electricity from renewables. Most of these technologies are being pioneered by BASF in collaboration with partners and are currently in a pilot stage. Regarding energy efficiency, we achieved our goal of introducing certified energy management systems (ISO 50001) at all relevant production sites by 2020, covering 91% of our primary energy demand.

We also offer solutions that help our customers to avoid GHG emissions. They are classified as Accelerators “Climate Change and Energy” in our portfolio steering approach “Sustainable Solution Steering” and reflect our wide portfolio of climate protection products. For example, our expandable polystyrene granulates Styropor® and Neopor® are used to insulate buildings and help to save heating energy and reduce CO2. We invest more than 40% of our annual Research and Development (R&D) expenditures (€2.086 billion total R&D expenses in 2020) on product and process innovations where the R&D target is related to energy/resource efficiency and climate protection.

In the future, we will calculate cradle-to-gate GHG emissions for almost all our products to increase carbon transparency for our customers. We use an in-house digital solution to calculate product carbon footprints (PCF). 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. We used the new method to calculate PCFs for the first products in 2020. We want to make the data for around 45,000 sales products available by the end of 2021.

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

C0.2

(C0.2) State the start and end date of the year for which you are reporting data.

	Start date	End date	Indicate if you are providing emissions data for past reporting years
Reporting year	January 1, 2020	December 31, 2020	No

C0.3

(C0.3) Select the countries/areas for which you will be supplying data.

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

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

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(s)	Please explain
Chief Executive Officer (CEO)	Description of the position and relation to climate issues: 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. In this role, the CEO takes care of the development of climate protection targets, monitoring of target performance, advancing measures towards target achievement and promoting/aligning climate-related issues in areas under responsibility of other Board members (e.g. accounting of 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, reports directly to the CEO. Example of a climate-related decision: In 2020, the CEO kicked off a senior project investigating how BASF can leverage even stronger emission reductions until 2030, steer towards net zero emissions by 2050 and capture business opportunities along the global energy transformation. The project has a direct reporting line to the CEO.

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 strategy	Our Management Board reviews at least annually major climate-related topics like, for instance: - Climate-related risks and opportunities

	Reviewing and guiding major plans of action Reviewing and guiding risk management policies Reviewing and guiding annual budgets Reviewing and guiding business plans Setting performance objectives Monitoring implementation and performance of objectives Overseeing major capital expenditures, acquisitions and divestitures Monitoring and overseeing progress against goals and targets for addressing climate-related issues	- 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. Example of how a selected mechanism contributes to the Board's oversight of climate issues in more detail: 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 warrants 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.

C1.2

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

Name of the position(s) and/or committee(s)	Responsibility	Frequency of reporting to the board on climate-related issues
President	Both assessing and managing climate-related risks and opportunities	More frequently than quarterly
Environment/ Sustainability manager	Both assessing and managing climate-related risks and opportunities	As important matters arise

C1.2a

(C1.2a) Describe where in the organizational structure this/these position(s) and/or committees lie, what their associated responsibilities are, and how climate-related issues are monitored (do not include the names of individuals).

President:

Position in the company: The President of the Corporate Development Division represents the highest responsibility for overall governance for climate protection below 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.

Responsibilities with regard to assessment and monitoring of climate-related issues: The President of the Corporate Development Division has oversight over the measures for GHG emission steering governed by the abovementioned 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. Finally, the President is a member of the Corporate Sustainability Board (CSB) led by a second Board member, which is BASF's central steering committee for sustainable development. It is comprised of selected heads of business, corporate and functional units as well as of the regions. The CSB monitors the implementation of the sustainability strategy and cross-divisional initiatives, defines sustainability goals and approves corporate position papers on sustainability topics. Climate-related work under the head of BASF's Corporate Development Division is discussed and aligned with the CSB in support of sustainable development and preparation of climate-related Board level discussions.

Rationale for 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.

Sustainability Manager:

Position in the company: The Sustainability Manager heads the "Carbon Steering" unit within the Corporate Development Division and is in reporting line to the President of the Corporate Development Division (= delegation of governance from President). The Sustainability Manager is involved in briefings to Board members on a case-by-case basis.

Responsibilities with regard to assessment and monitoring of climate-related issues: The unit led by the position is in charge of monitoring / analyzing climate change related risk and opportunities, treating requests of internal/external stakeholders, carbon accounting (corporate carbon footprint), updating the status of goals and emissions performance and

guidance for continuous improvement, creating information materials, steering improvement projects. It maintains an internal network of experts with link into operations. Furthermore, it facilitates alignment of the three major units of the Corporate Development Division on GHG emission steering measures. Finally, the Management Team for Climate Protection (MTCP) is headed by the unit. This committee comprises members from different corporate units (e.g. sustainability strategy, advocacy, investor relations, procurement) and regional representatives, and constantly reviews climate-related topics, especially risks and opportunities. As head of the unit, the Sustainability Manager is supervising the outcomes of and issues arising from these activities, e.g. via regular meetings, jour fixes and internal updates, and is thus bearing responsibility for the assessment, monitoring and management of such climate related issues.

Rationale for assignment: The Sustainability Manager's position and the entire "Carbon Steering" group have specifically been created as a focused organizational unit for optimum support of climate action within the BASF strategy implementation and for overall governance for climate-related topics within BASF.

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	Type of incentive	Activity inventivized	Comment
Board/Executive board	Monetary reward	Efficiency target	Actual annual variable compensation of Board members is based on the achievement of set targets and the company's success. This includes the achievement of BASF's climate protection target.
Executive officer	Monetary reward	Efficiency target	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, is incentivized.
Environment/Sustainability manager	Monetary reward	Efficiency target	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 or increase of sales of climate protection products, is incentivized.
Process operation manager	Monetary reward	Efficiency target	In the context of continuous improvement of operational excellence, process operation managers are incentivized to increase energy efficiency and reduce emissions in BASF plants.
Other, please specify Marketing manager/account executive	Monetary reward	Other (please specify) Sales of climate protection products	Marketing manager's performance is measured, amongst other KPIs, against sales targets, including sales of climate protection products.
Other, please specify Project leaders R&D	Monetary reward	Other (please specify) Developing climate protection products	R&D managers pursue projects based on individual targets related to progress on the development of new products, 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.
All employees	Monetary reward	Other (please specify) Emissions reduction project	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 2020 result in an annual greenhouse gas emission reduction of about 12,000 metric tons of CO2e.

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.

Description of the 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 calculation of likelihoods. If no such statistical relationship can be relied on (e.g. when assessing the probability of implementation of certain policy measures), 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). Climate-related risk reporting is systematically integrated into the aggregated opportunity/risk exposure of the BASF Group delivered twice a year by Corporate Controlling and Finance to BASF Group's management

Identification: The climate-related exposure assessment under the ERM framework is provided by the BASF Management Team for Climate Protection (MTCP), including experts from environment, health and safety (EHS), corporate sustainability, advocacy, corporate technology, investor relations (IR), new business, procurement, and regional representatives. The MTCP meets at least quarterly to exchange on the following risks and opportunities covering all value chain stages:

Reputation: Teams of IR, corporate strategy and advocacy monitor external stakeholder (e.g. investors, analysts, NGOs) expectations and brand perception and report regularly in the MTCP to assess effects for BASF's reputation on a consolidated basis.
Market development: BASF's subsidiary scouting for new business areas assesses opportunities for new climate protection products, and a team of business unit (BU) representatives regularly evaluates customer expectations regarding the carbon performance of our products. On this basis, the MTCP discusses trends relevant at corporate level, e.g. regarding fit with the BASF strategy.

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 team of experts from BUs and central functions 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 from local developments (e.g. global dissemination of ETS) and global progress on climate protection (e.g. Paris Agreement).
Climate/weather change: Potential physical 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 own observations and public information. The information is shared with site managers to complement the standard procedures for long-term maintenance of the sites and with the MTCP for a comprehensive corporate risk assessment. 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 Controlling 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. Depending on the type of risk/opportunity, the time horizons considered vary. For instance, regulations regarding the ETS and risks connected to it, are already currently affecting our operations, while emerging regulation requires a medium- and long-term perspective.

Responding: 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. The central MTCP can be involved by responsible units by (a) informing the MTCP about their decisions and management alignment steps, or (b) consulting the MCTP for guidance. The aggregation of risk management information at MCTP level warrants that individual management steps are aligned and appropriate also from a wider corporate perspective.

Case studies:
Physical: (a) Situation: Water availability at our sites may be affected by climate change, potentially endangering continuity of operations. (b) Task: BASF corporate environmental experts were tasked to update the risk exposure assessment of BASF's largest site in Ludwigshafen, based on findings from extreme weather conditions (high water temperature, low water levels) in 2018. (c) Action: Analysis of likelihood of occurrence and/or intensity of extreme weather events at the site in close cooperation with the federal water authority and proposal for respective climate change adaptation measures on site. (d) Result: In 2019 and 2020, the site implemented a package of measures (e.g. time chartering ships with high load capacities in the case of low water, increase of cooling capacity) to make extremely long periods of low water more manageable and reduce the risk of detrimental impacts at our site in Ludwigshafen.

Transition: (a) Situation: BASF-internal analyses of changes in the regulations underpinning the EU ETS and behavior of ETS market participants point to increasing ETS certificate prices (e.g. due to tightening of EU climate targets) over the fourth trading period. (b) Task: Identify and assess levers to tackle cost burden through the ETS and reduce risk of increasing operating costs. (c) Action: The risk can be mitigated i.a. by improving efficiency in our own power plants to reduce emissions. In 2019, we started therefore the modernization of our combined heat and power plant in Schwarzheide (DE), with investments of €73 million. (d) Result: Once it is started up in 2022, it will produce 10% more electricity and the CO2 emissions factor of the power generated will be around 10% lower due to higher fuel efficiency. As a result, fewer emission allowances need to be purchased for this site.

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 regulation targeting energy use and efficiency as well as reduction of emissions. Such regulation can result in significant cost burdens for production. +++ Risk example: A high number of power plants and chemical plants of BASF are regulated under the European ETS. Changes of 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. The findings are fed back into the BASF Management Team for Climate Protection, which prepares the climate-related part of the aggregated

		opportunity/risk exposure report of the BASF Group delivered twice a year to the Board of Directors.
Emerging regulation	Relevant, always included	Rationale for relevance: BASF as an energy- and emissions-intensive company is directly affected by current and emerging regulation targeting energy use and efficiency as well as reduction of emissions. Such regulation can result in significant cost burdens for production. +++ Risk 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. The findings are fed back into the BASF Management Team for Climate Protection, which prepares the climate-related part of the aggregated opportunity/risk exposure report of the BASF Group delivered twice a year to the Board of Directors.
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. +++ Risk 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 and reported to the BASF Management Team for Climate Protection as appropriate, depending on the magnitude and likelihood of impact. The Management Team prepares the climate-related part of the aggregated opportunity/risk exposure report of the BASF Group delivered twice a year to the Board of Directors.
Legal	Not relevant, explanation provided	BASF monitors the development of litigation in all areas and geographies relevant to the company. While there is an overall increase of such litigations, there is no case indicating that the chemical industry, nor BASF in particular, will become subject to lawsuits or other forms of legal disputes with a clear relation to climate change 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, 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 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. +++ Risk 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 for 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 and reported to the BASF Management Team for Climate Protection as appropriate, depending on the magnitude and likelihood of impact. The Management Team prepares the climate-related part of the aggregated opportunity/risk exposure report of the BASF Group delivered twice a year to the Board of Directors.
Reputation	Relevant, always included	Rationale for relevance: BASF has a significant corporate carbon footprint and is listed amongst the 167 focus companies accounting for more than 80 percent of corporate industrial greenhouse gas (GHG) emissions by Climate Action 100+. 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 would perceive BASF's business activities to be misaligned with the growing global momentum to act against climate change this will pose a reputational risk to the company that can ultimately lead to lower sales and a reduced market valuation. +++ Risk example: BASF is on the company focus list of various investor-led initiatives aiming to engage with the world's largest corporate GHG emitters to curb emissions, e.g. Climate Action 100+. Investor relations (IR) of BASF is closely monitoring activities of the initiatives and engaging with the stakeholders. Being a member of the BASF Management Team for Climate Protection, which prepares the climate-related part of the aggregated opportunity/risk exposure report of the BASF Group delivered twice a year to the Board of Directors, IR provides information on related developments and risks directly for the report
Acute physical	Relevant, always included	Rationale for relevance: BASF operates in around 250 production sites in diverse environments in around 90 countries 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 intrinsic risk factor with potential significant impact on individual sites and therefore need to be assessed for relevance. +++ Risk example: BASF operates production sites in regions potentially vulnerable to 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 for 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 own observations and public information. The information is shared with site managers to complement the standard procedures for long-term maintenance of the sites and also made available to the BASF Management Team for Climate Protection for consideration in the aggregated opportunity/risk exposure report of the BASF Group delivered twice a year to the Board of Directors.
Chronic physical	Relevant, always included	Rationale for relevance: BASF operates in around 250 production sites in diverse environments in around 90 countries 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 intrinsic risk factor with potential significant impact on individual sites and therefore need to be assessed for relevance. +++ Risk 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 availability of water at affected production sites and thus represent a risk that BASF must decrease production capacity and/or change 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 own observations and public information. The information is shared with site managers to complement the standard procedures for long-term maintenance of the sites and also made available to the BASF Management Team for Climate Protection for consideration in the aggregated opportunity/risk exposure report of the BASF Group delivered twice a year to the Board of Directors.

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. 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)

100,000,000

Potential financial impact figure – maximum (currency)

200,000,000

Explanation of financial impact figure

The quantification of the risk is based on the following assumptions: 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 20-30%, translating into reduced free allocation of about 2.5 million allowances for BASF. At the same time ETS certificate prices may rise significantly during the 4th trading period. Calculating with an estimated new range of carbon prices of 35-65 €, this results in a risk of about €100-200 million per year (conservative estimation approach).

Cost of response to risk

1,000,000,000

Description of response and explanation of cost calculation

Description of response: We mitigate cost impacts by reducing GHG emissions intensity through numerous measures.
(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 the production of basic chemicals. At the Antwerp site, BASF is planning to invest in one of the largest carbon capture and storage projects under the North Sea.
(2) Systematic implementation of improvement processes at existing production plants: at the end of 2020, 47 sites in Europe had certified energy management systems (ISO 50001), representing 95% of our primary energy demand in Europe. Each year multiple reduction projects are assessed, kicked off and implemented (140 measures in EU implemented in 2020).
(3) Increasing the share of renewable energy in our power supply: we intend to invest in wind parks to facilitate this (14 BASF sites in Europe were e.g. entirely or partially powered by emission-free electricity in 2020).
(4) Active engagement with decision makers and governments at the regional, federal and EU level on climate and energy-related issues.

Case study: Situation: We expect increasing ETS certificate prices leading to higher costs for electricity production in our own power plants. Task: Improve efficiency in our 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: Once it is started up in 2022, it will produce 10% more electricity at a 10% lower CO2 emissions factor of the power generated thanks to higher fuel efficiency.

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). Likewise, we primarily pursue renewable energy purchase opportunities which maintain our competitiveness and thus currently have no significant cost impact. Projected capital expenditures for new technologies amount to < €1 billion in 2021-2025 while 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). In total, costs therefore sum up to about €1 billion in 2021-2025.

Comment

Identifier

Risk 2

Where in the value chain does the risk driver occur?

Downstream

Risk type & Primary climate-related risk driver

Market

Changing customer behavior

Primary potential financial impact

Decreased revenues due to reduced demand for products and services

Company-specific description

BASF supplies products to numerous customers in nearly every part of the world. The number of customers considering sustainability-related information in their supply relationships (e.g. sustainability criteria in supplier performance reviews, sustainability characteristics of purchased products like Product Carbon Footprints) is constantly increasing. For example, the corporate sustainability team handled >300 sustainability-related customer requests like supplier performance reviews in 2020 (2019: >200 requests). Given BASF's significant corporate carbon footprint and its portfolio comprising products with a high GHG intensity (e.g. ammonia, nitric acid or high-value chemicals), company engagement and performance in climate protection is a typical area of consideration within sustainability. For example, 40 major global customers of BASF from the automotive, chemicals and a range of other sectors, in total representing about 6% of our sales, requested information on our climate protection activities through the CDP Supply Chain Programme in 2020 (2019: 33). Lack of corporate engagement

and performance in this area (e.g. receiving a low score in supplier performance reviews, limited ability to address customer-specific questions on climate-related topics around purchased products) poses a risk to impact the customer relationship such that BASF products face lower demand or even get delisted completely by the customer.

Time horizon

Medium-term

Likelihood

About as likely as not

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)

150,000,000

Potential financial impact figure – maximum (currency)

300,000,000

Explanation of financial impact figure

We estimate the impact of changing customer behaviour to be high (i.e. more than €100 million). For example, if the customers requesting information on our climate protection activities through the CDP Supply Chain Programme (40 customers representing about 6% of our sales in 2020) reduce demand by 5-10% due to a low CDP score this would result in loss of sales in the order of €150-300 million p.a. This range was selected as indicative figure for the high impact.

Cost of response to risk

4,500,000

Description of response and explanation of cost calculation

Description of response: In support of the customer relationship BASF exchanges relevant information with customers (e.g. via bilateral discussions, supplier performance reviews, CDP Supply Chain program) on its carbon footprint, climate protection strategy and measures – information which is also reported transparently through public media (e.g. Corporate Report, website). Further, customer-specific requests related to climate are addressed. On top of that, in 2019 we initiated a project to derive transparent emission data (PCFs - Product Carbon Footprints) for the entire portfolio of approximately 45,000 products based on a global level. We plan to make PCF cradle-to-gate data available for the entire portfolio by the end of 2021.

Case study: Situation: In 2020, a customer aiming to scale up fuel cell engines as low-carbon mobility solution was looking for a lightweight product alternative for various

metal fuel cell parts. Task: Provide the appropriate alternative material which fulfils the performance requirements of the customer and helps to promote the low-carbon mobility solution. Action: BASF engaged closely with the customer to provide design support (e.g. using BASF's simulation tool Ultrasim®), application know-how and tailored technical services for material selection. Result: The customer decided to use BASF polyphthalamide for several components of the new fuel cell engine, acknowledging BASF's expertise and support for promoting the low-carbon solution.

Explanation of cost: We estimate that ~25 FTE (cost of ~€150,000 each p.a.) in corporate units are dedicated to support the customer dialogue on sustainability, including climate change (e.g. the corporate sustainability team handled >300 sustainability-related customer requests like supplier performance reviews in 2020). Contributions by marketing managers in business units result in no specific additional costs as they are covered by their standard budgets. Regarding the PCF data project, we estimate that the resources of the core team members and the supporting functions sum up to a total of ~5 FTE (cost of ~€150,000 each p.a.).

Comment

Identifier

Risk 3

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Reputation

Increased stakeholder concern or negative stakeholder feedback

Primary potential financial impact

Decreased access to capital

Company-specific description

BASF has a significant corporate carbon footprint (e.g., it is listed amongst the 167 focus companies accounting for more than 80 percent of corporate industrial greenhouse gas (GHG) emissions by Climate Action 100+) and its portfolio comprises products with a high GHG emission intensity (e.g., ammonia, nitric acid). As a global industry leader, BASF is expected to act proactively on the challenges of climate change. BASF is in the focus of investor-led initiatives aiming to engage with the world's largest corporate GHG emitters to curb emissions, e.g., Climate Action 100+. If major investors would perceive BASF business activities to be misaligned with the growing global momentum to act against climate change this would pose a reputational risk to the company. About 16% of BASF shares (147 million, value around €9,500 million at year-average stock price 2020) are held by shareholders who describe socially responsible investment (SRI) being at the core of their investment strategy. In case of a major reputational loss this group may divest a significant number of shares which will

reduce BASF's market value. Moreover, there is potential risk of exclusion from thematic (climate) funds.

Time horizon

Short-term

Likelihood

About as likely as not

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)

200,000,000

Potential financial impact figure – maximum (currency)

300,000,000

Explanation of financial impact figure

About 16% of BASF shares (147 million shares, value around €9,500 million at year-average stock price 2020) are held by shareholders who describe socially responsible investment (SRI) being at the core of their investment strategy. In case of a major reputational loss this group may divest a significant number of shares which will reduce BASF's market value. The effect on market valuation is estimated to be high (i.e. more than €100 million, according to our risk classification reported under C2.1b), given that divesting only about 2.5% of these 147 million shares of BASF SE would already affect a value above the threshold of high impact. The selected range is indicative of this high impact, which cannot be quantified more exactly though, since any estimation of financial effects due to a change in reputation is subject to extreme uncertainty.

Cost of response to risk

450,000

Description of response and explanation of cost calculation

Description of response: BASF engages in active dialogue with relevant stakeholders, including investors, and reports transparently on its climate protection strategy and measures via regular activities and channels (e.g., Annual Report, CDP response, website, investor dialogues) and individual formats (e.g., events, special publications).

Case study: Situation: Role of business for climate protection is subject to public discussion, leading to increased scrutiny of investors regarding GHG-intensive companies like BASF. Task: Disseminate information about BASF positions, activities and performance in this area to demonstrate that BASF manages this topic properly. Action: Due to the Corona pandemic, some investor related activities had to be

cancelled (roadshows) or moved into the virtual space in 2020. We participated in several virtual conferences, addressing international audiences of mainstream and ESG investors. In addition, we hosted 19 ESG engagement calls with investors. In total, we recorded several dozen interactions with investors on sustainability topics.
Result: BASF's sustainability efforts are well received by financial market participants. We achieved better understanding for BASF's carbon management, increasing the likelihood that investors keep BASF shares in support of the climate protection strategy.

Explanation of cost: We estimate that corporate investor relations, sustainability and communications resources for our open dialogue with all stakeholders on climate change sum up to about 3 FTE at a cost of ~€150,000 each p.a.

Comment

Identifier

Risk 4

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Acute physical

Increased severity and frequency of extreme weather events such as cyclones and floods

Primary potential financial impact

Decreased revenues due to reduced production capacity

Company-specific description

Production at BASF's largest site Ludwigshafen depends on the adjacent river Rhine in two ways: (a) withdrawal of water mainly for cooling purposes, (b) transportation of raw materials and final products via barges (about 40% of all raw materials that are transported to or from the location are transported over 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 over the years 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 had assessed physical risks from climate change for the site in 2015 and concluded that significant changes in the risk of extreme weather events will materialize beyond 2050 and that the existing adaptation 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, 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 whether global warming has already changed the likelihood of occurrence and/or intensity of extreme weather events at the site such that it has become vulnerable, even with the existing countermeasures designed to mitigate the impact of historically observed weather extremes at the site. The question is at the edge of current climate research and therefore results are subject to large uncertainties. For Ludwigshafen, extended analyses in cooperation with external partners indicated that an increased risk from more frequent and intense extreme weather events with the previously described impacts cannot be excluded.

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

Cost of response to risk

20,000,000

Description of response and explanation of cost calculation

Description of response: In 2019, we included Climate Resilience in the central strategic goals of the Ludwigshafen site (Zukunftsbild Werk Ludwigshafen). By this, major projects are challenged if they contribute to climate resilience. Under this umbrella, we initiated several targeted measures to increase the resilience of the Ludwigshafen site against potentially more frequent and prolonged phases of very high water-temperature

and very low water levels. Progress and status of these projects are reported biannually directly to site management, which is located below the board-level. 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 is to be improved in the coming years with various measures.

Case study: Situation: Low water level limits navigability of the river 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 water levels together with the Federal Institute of Hydrology, which enables more accurate long-term forecasts for our supply chains, we have chartered ships suitable for low water, and we have started to make loading/charging stations more flexible, which we will continue also in the next years. In addition, we have developed a BASF ship type with partners, which is designed for extreme low-water situations. Concerning high water temperatures, we have increased the cooling capacity for our production in 2019 and 2020. For this we optimized existing re-cooling systems, expanded re-cooling systems, and in addition changed the control of our cooling water network. Result: Longer usability of waterway as 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 €20,000,000 represents the total costs of immediate measures from 2019 until 2021, initiated to increase the resilience of the Ludwigshafen site and can be attributed 50% each, to measures regarding logistics and expansion of cooling capacity mentioned above.

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?

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

BASF's primary energy use amounted to about 60 million MWh in 2020, 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 are 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 German legislation for combined heat and power plants ("Kraft-Wärme-Kopplungsgesetz"), like e.g. funding of energy efficiency increase by modernization of such plants, which BASF has already applied for successfully in 2018. Subsequently, in 2019 we started the modernization of our combined heat and power plant in Schwarzheide, Germany with investments of €73 million. Once it is started up in 2022, it will produce 10% more electricity and the CO2 emissions factor of the power generated will be around 10% lower thanks to higher fuel efficiency. For BASF, besides our company-intrinsic strive for operational excellence, these incentives can strengthen the business case for energy efficiency measures, make them more economically viable and speed up implementation – leading to additional cost savings for BASF in the short- to medium-term.

Time horizon

Short-term

Likelihood

Virtually certain

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

13,900,000

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 almost 250 energy efficiency measures implemented globally in 2020 under the governance of our Energy Management Team. 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, new combined heat and power plants, boiler efficiency upgrades, tower packing replacement, HVAC upgrades 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 results in the given financial impact figure of €13.9 million.

Cost to realize opportunity

15,000,000

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 2020, 91% of our primary energy demand were covered by certified energy management systems according to DIN EN ISO 50001. Further, we continuously run operational excellence programs triggering annual energy efficiency measures.

Case study: Situation: BASF has set up an excellence program under the action area “Operations” within the corporate strategy. The program runs from 2019 to 2021 and includes efficiency measures in production, engineering, maintenance, logistics, procurement and administration. Task: Within the program all BASF sites and plants have to propose measures within a central project database where opportunities are tracked. Action: In 2020, 223 additional energy efficiency measures were initiated, 247 measures were implemented, and another 121 entered implementation. The global Energy Management team monitored their progress in the different plants all over the world. Result: From the measures implemented in 2020, BASF will save around €13.9 million per year in energy cost, contributing about 123,000 t of annual CO2e savings. The database allows to track measures as best practice examples for other sites.

Explanation of cost: Costs of €15 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

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

BASF's product portfolio contains innovative solutions for thermal insulation of buildings. For example, we offer Neopor®, Styrodur® and Elastopor® for insulation up to a nearly zero energy home standard, as well as the flexible insulation material Slentex®. We are continuously working to improve the energy efficiency of our offerings as well as converting customers from HFC- to HFO-based PU systems especially in the North American region in line with climate control regulations. These materials can help saving energy and therefore 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. 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, the revised European EPBD (Energy Performance of Buildings Directive) has requested 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 an increasing demand for innovative BASF insulation products for the building and construction sector.

Time horizon

Medium-term

Likelihood

Very likely

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

150,000,000

Potential financial impact figure – maximum (currency)

240,000,000

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 [2] propose a global target of 3% per year in 2030 to decarbonise buildings in line with the Paris Agreement). The increased renovation rate will lead to a respective growth of the market for insulation materials, and since our materials are primarily used for insulation of larger surfaces, we assume growth rates above market average of about 5%. This growth translates into additional annual net sales of €150-240 million per year.

Citations:
[1] European Commission Roadmap: A Renovation Wave initiative for public and private buildings https://ec.europa.eu/info/law/better-regulation/have-your-say/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: We expand production capacities and introduce new products into the market, like the Cavipor® FTX 1 insulation material or biomass balance (BMB) versions of Styropor®, Neopor® and Styrodur®. Next to that, we engage in several associations and standardization bodies on standards for energy-efficient construction (e.g. CEFIC, PlasticsEurope, PU Europe, BDI Gebäude AG). Further, we promote the benefits of insulation materials in demonstration projects. For example, in 2020 we became a primary industry partner in the NEST modular innovation building project operated by two Swiss research institutes, Empa and Eawag, in Dübendorf (Switzerland). Finally, we invest in R&D of new low carbon insulation solutions. Central sustainability tools (e.g. Eco-Efficiency Analysis) support this work.

Case study: Situation: Every year more than 1 million homes in the US are re-sided in a standard process without reducing air leakage and/or adding insulation. The result is that current practices lock in energy inefficiencies for a long time, since this type of renovation is only done once every 25 years. Task: Demonstrate the benefits of BASF products in energy efficiency upgrades linked to home improvement projects that are occurring nevertheless and leverage the respective business opportunity for BASF. Action: In 2020, we started to engage in the “Re-Side Right” project funded by the U.S.

Department of Energy's Building America Program, which is investigating the performance benefit of installing a new insulation developed by BASF as part of re-siding. Result: Communication of the findings from the project promotes the adoption of "energy-enhanced" residing as part of standard practice.

Explanation of cost: In 2020 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

BASF is the world's largest chemical supplier to the automotive industry. The global light vehicle production is projected to increase to more than 83 million units in 2021. BASF expects the share of chemicals in average vehicles to increase, due to the trend towards energy efficiency and clean energy. It is driven by emissions performance regulations around the world, like e.g. in Europe where the EU-wide fleet targets have been tightened to a reduction of 37.5% of CO2 emissions from 2030 on, compared to 2021. BASF drives new technologies and helps customers meeting their sustainability commitments, for example:
(1) We offer advanced cathode active materials (CAM) for lithium-ion (Li-ion) batteries, which play a key role for battery performance, energy density, service life and safety. Through BASF's European production sites in Harjavalta (FI) and Schwarzheide (DE), BASF's CAM-related CO2 burden will be 30% below benchmark players and >60% lower than the lowest performing CAM producers in the peer group.
(2) BASF is contributing to a circular value chain by providing efficient recycling technologies to regain valuable metals used in batteries for electric vehicles. In 2020, we launched the project "Recycling Li-ion batteries for electric vehicles" together with Eramet and SUEZ. The project received €4.7 million in EU funding. The aim is to

develop an innovative, large-scale process to recycle batteries along the entire value chain – from collecting end-of-life batteries and recovering mineral raw materials to using these in the production of new battery materials. BASF will contribute with expertise in cathode material production to the project. Further, the research division in Ludwigshafen (DE), is developing a new chemical process to recycle Li-ion batteries (recovery of battery grade lithium hydroxide).
(3) ChemCyclingTM recycles plastic waste, which is currently landfilled or incinerated, into primary materials, which causes less CO2 emissions than production of plastics from primary fossil resources (naphtha).
A 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, an estimated range

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

700,000,000

Potential financial impact figure – maximum (currency)

1,000,000,000

Explanation of financial impact figure

The lithium-ion battery market is expected to grow at about 25% per year to 2030 (measured by GWh required) [1]. For 2030, we anticipate annual sales of around 32 million electric vehicles (25 million if battery electric vehicles only) [1]. Depending on the mix of powertrains and technological progress, this corresponds to ~3000 kt market [1] for cathode active materials, valued at €65-75 billion [2]. Our planned production in Schwarzheide, Germany, will enable supply of around 400,000 electric vehicles per year (start-up planned for 2022), representing a share of 1.3% of the total number of units in 2030, or a value of about €700-1,000 million (note that potential contributions from other plants have not been considered in this estimate).

Citations:
[1] Bloomberg NEF Long-Term Vehicle Outlook Report May 2020.
[2] WoodMac Global Long-Term Outlook Reports for Nickel, Cobalt, Lithium April 2020.

Cost to realize opportunity

850,000,000

Strategy to realize opportunity and explanation of cost calculation

Strategy: (1) We expand production capacities and introduce new products in the areas of lightweight engineering concepts and battery materials. In 2017, BASF announced to invest in the triple digit-million Euro range to build largescale battery materials production plants in Europe to support the European electric vehicle value chain. The precursor CAM plant in Harjavalta (FI) will utilize locally generated renewable energy. The CAM plant in Schwarzheide (DE) will rely on energy supply from a highly efficient combined heat and power plant. Until the battery materials plant is commissioned, the integration of renewable energies is also planned. Furthermore, its modular design and infrastructure allows for the rapid scale-up of manufacturing capacities enabling BASF to meet increasing customer demand for the European electric vehicle market. Start-up of both plants is planned in 2022. (2) We invest in R&D of low-carbon solutions for the automotive sector, e.g. high-energy density battery materials. By 2025, our innovations in 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. (3) We engage in partnerships fostering low-carbon mobility (e.g. Global Battery Alliance).

Case study: Situation: In 2020, a manufacturer of heavy-duty, zero-emission engines required light-weight materials with stable material properties across varying temperatures. Task: Find a lightweight solution to convert parts from die-cast aluminum and high-temperature hoses into high-performance plastics to scale up fuel cell engines to mass-produced parts while maintaining performance and safety. Action: BASF supplied the manufacturer with a material which provides the necessary properties. It shows excellent stiffness and strength, a high toughness and good wear and friction behavior. Result: The customer managed to get to the market with the low-carbon solution on time. BASF proved itself as a preferred technology partner and drives sales in a low-carbon economy.

Explanation of cost: In 2020 BASF invested about €250 million in R&D of surface technologies, which include automotive catalysts and battery materials. The Capex budget 2020-2024 for surface technologies (i.a., investments in new production capacities), amounts to around €3 billion, i.e. €600 million on average per year. Hence, total annual costs are estimated to be roughly in the order of about €850 million.

Comment

Identifier

Opp4

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

BASF is a global market leader in the production of biobased and biodegradable plastics. In the agriculture, consumer and packaging industry, these products are used to design more sustainable solutions by promoting resource efficiency (which supports climate protection), healthier soils and tackle the global problem of plastic pollution. Recent regulatory initiatives and new laws to tighten standards on single use plastic bags represent a significant market opportunity for BASF:
(1) In France, fruit & vegetable plastic bags must be certified home-compostable and have a minimum biobased content of 50%.
(2) In Italy, all lightweight and fruit & vegetable plastic bags must be certified compostable. In addition, the latter must have a minimum biobased content of 50%. Additionally, Italy plans to exempt plastics destined for composting from a forthcoming plastic tax and will establish the first European system of extended producer responsibility (EPR) dedicated to compostable plastic packaging for the direct benefit of the composting industry.
(3) Spanish legislation bans all non-compostable light plastic bags from 2021 onwards.
(4) In Austria, all fruit & vegetable bags need to be certified home-compostable and > 50% biobased.
(5) The EU has decided that separate organic waste collection becomes mandatory in EU Member states by Jan 1, 2024.
(6) China will ban a list of single use and take away applications (including bags, food delivery service ware), made of non-compostable materials nationwide by 2025. Additionally, waste management is to be set up by 2025.
BASF can offer products to satisfy these law requirements and is therefore well positioned. These developments create growth opportunities for our product ecovio, as certified compostable ecovio bags make organic waste collection easier and more hygienic. Further, in the agricultural sector, opportunities emerge with regards to BASF products that support climate protection:
(7) The EU Commission has published a study to support preparation of the EU Commission Guidance on EPR Schemes. The study recommends an EPR fee for non-biodegradable mulch films. Biodegradable mulch films are to be exempted. If adopted as EU policy this creates chances for soil biodegradable ecovio mulch film.
(8) Farm to Fork Strategy published by EU Commission sets the target of reducing use of plant protection products by 50% by 2030. This creates growth opportunities for soil-biodegradable mulch film which suppresses weeds.

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

The quantification of the opportunity is based on the following assumptions: Market studies show that BASF currently has a market share of about 10% in the markets mentioned above. The figure of 30,000,000 describes the assumed additional revenue of BASF if the overall market of the described products grows within said countries (1) - (8), while BASF's market share remains at 10% (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 bio-degradable plastics of €300 million in the next years. Due to the new legislation in China, we see the potential of 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

300,000

Strategy to realize opportunity and explanation of cost calculation

Strategy: BASF demonstrates the value of compostable bags to legislators and customers in pioneer projects in the countries, and also highlights the benefits of its products through several externally reviewed life cycle assessments (LCA) on the use of compostable bags. Further, BASF actively lobbies for the benefits of the biodegradable and biobased products through associations (e.g. Bioplastics in Europe) and in direct contact with stakeholders (e.g. legislators).

Case study: Situation: China has adopted a legislation which mandates that specific single use plastics (e.g. light bags, bowls and cups for takeaway food, carrier envelopes) become biodegradable by law. Task: Demonstrate that certified compostable ecovio can be handled in organic waste treatment infrastructure in China, show that suggested standards for compostable plastics work "in practice", and that BASF is a credible stakeholder for discussing solutions in this area. Action: We have

identified Chinese partners and co-developed detailed plans with them to demonstrate processability of our materials in Chinese organic waste treatment plants in 2021. Planning of the projects was completed, and implementation started. Due to Corona pandemic, the project is delayed but will be finalized in 2021. Result: BASF is among the experts that are heard in the specification of the standards defining biodegradability in China. By this and field testing we ensure that we can provide the right products for the Chinese market. Demonstration projects are ongoing, and results will be available in 2021 due to time loss in Corona pandemic.

Explanation of cost: We estimate a total of €300,000 to cover BASF personnel and material costs as well as time of consultants and academics to support us in China to do these projects in Chinese waste treatment plants: material costs of compostable ecovio to be tested (€30,000), costs for producing compostable ecovio products in specific applications and for distributing to households and restaurants (€50,000), personnel costs of BASF experts supporting the project implementation and communication (€150,000), personnel costs for consultancy of academics reviewing and summarizing the study results (€70,000). No significant additional costs are linked to our further lobbying actions as they are mainly covered by our standard budgets (e.g. personnel expenses in corporate communication, general marketing budgets).

Comment

The project has started and the first experiments at our collaboration partner, the Tongji University, Shanghai are ongoing. Due to Corona Pandemic the set-up of new organics recycling facilities in Shanghai as well as the testing connected to that is delayed. Results will be available in 2021. Due to legislative changes in China, we do see a potential impact on the markets coming up in future. Currently, the full effect is not estimable. This uncertainty is also visible in strong differences in market size estimations (e.g. Asiachem, Greenpeace, Degradable Plastics Committee of the Chinese Standardization Office). Therefore, we kept our current estimations from 2020 but very closely monitor the Chinese and global markets to react quickly to new market potentials.

Identifier

Opp5

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Markets

Primary climate-related opportunity driver

Other, please specify

Reputation, Increased stakeholder interest

Primary potential financial impact

Other, please specify

Increased capital availability

Company-specific description

BASF has a significant corporate carbon footprint (e.g. it is listed amongst the 167 focus companies accounting for more than 80 percent of corporate industrial greenhouse gas (GHG) emissions by Climate Action 100) and its portfolio comprises products with a high GHG intensity (e.g. ammonia, nitric acid). As a global industry leader, BASF is expected to act proactively on the challenges of climate change: BASF is in the focus of investor-led initiatives aiming to engage with the world's largest corporate GHG emitters to curb emissions, e.g. Climate Action 100+. Recognizing its potential impact on climate and its role for a sustainable future, BASF has embedded sustainability into its company purpose and taken the task to make positive contributions in the area of resources, environment and climate. About 16% of BASF shares (147 million, value around €9,500 million at year-average stock price 2020) are held by shareholders who describe socially responsible investment (SRI) being at the core of their investment strategy. If major investors perceive BASF business activities to be contributing to or even leading the growing global momentum to act against climate change this will pose a reputational benefit for the company, ultimately resulting in an opportunity to attract financial capital and increase market valuation. Moreover, there is an opportunity for inclusion in thematic (climate) funds.

Time horizon

Short-term

Likelihood

About as likely as not

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)

200,000,000

Potential financial impact figure – maximum (currency)

300,000,000

Explanation of financial impact figure

About 16% of BASF shares (147 million shares, value around €9,500 million at year-average stock price 2020) are held by shareholders who describe socially responsible investment (SRI) being at the core of their investment strategy. In case of further improvement of our reputation this group may decide to increase its share in BASF, and we may be able to attract other investors of the same kind. The effect on market valuation is estimated to be high (i.e. more than €100 million, according to our risk classification as reported under C2.1b), given that increasing the group's shares by only

about 2.5% would already affect a value above the threshold of high impact. The selected range is indicative of this high impact, which cannot be quantified more exactly though, since any estimation of financial effects due to a change in reputation is subject to extreme uncertainty.

Cost to realize opportunity

450,000

Strategy to realize opportunity and explanation of cost calculation

Strategy: BASF engages in active dialogue with relevant stakeholders, including investors, and reports transparently on its climate protection strategy and measures via regular activities and channels (e.g. Annual Report, CDP response, website, investor dialogues) and individual formats (e.g., events, special publications).

Case study: Situation: SRI-oriented investors analyse BASF share for investment opportunities. Task: Disseminate information about BASF positions, activities and performance regarding sustainability, including climate change, to attract capital from respective investors. Action: Due to the Corona pandemic, some investor related activities had to be cancelled (roadshows) or moved into the virtual space in 2020. We participated in several virtual conferences, addressing international audiences of mainstream and ESG investors. In addition, we hosted 19 ESG engagement calls with investors. In total, we recorded several dozen interactions with investors on sustainability topics. Result: BASF's sustainability efforts are well received by financial market participants. We achieved better understanding for BASF's carbon management, increasing the likelihood that investors keep BASF shares in support of the climate protection strategy.

Explanation of cost: We estimate that corporate investor relations, sustainability and communications resources for our open dialogue with all stakeholders on climate change sum up to about 3 FTE at a cost of ~€150,000 each p.a.

Comment

C3. Business Strategy

C3.1

(C3.1) Have climate-related risks and opportunities influenced your organization's strategy and/or financial planning?

Yes, and we have developed a low-carbon transition plan

C3.1a

(C3.1a) Is your organization's low-carbon transition plan a scheduled resolution item at Annual General Meetings (AGMs)?

	Is your low-carbon transition plan a scheduled resolution item at AGMs?	Comment
Row 1	No, and we do not intend it to become a scheduled resolution item within the next two years	In the BASF Report 2020 (p. 135-136) we have published our CO2 reduction measures; the actual management measures of BASF Group are described in detail. This “low carbon transition plan” was indirectly approved by the Annual Shareholders’ Meeting 2021 as part of the resolution giving formal approval to the actions of the members of the Board of Executive Directors and the Supervisory Board. Under German stock corporation law, the shareholders’ meeting may only resolve on matters covered by the specific catalogue of responsibilities of the shareholders’ meeting set forth in the law. This excludes any direct or indirect involvement in and resolution on management matters. These matters are the exclusive responsibility of the Board of Executive Directors.

C3.2

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

Yes, qualitative and quantitative

C3.2a

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

Climate-related scenarios and models applied	Details
Other, please specify (7 climate change scenarios: 4 customized with focus on transition, 3 with focus on physical change)	Objective: Ambition and implementation of global climate politics are decisive for 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. Apart from transition risks, BASF may be affected by physical risks from climate change. To assess the impact of future environmental conditions at 10 BASF sites, a commercially available set of scenario results was used. Methodology (scenario definition, inputs, analytical methods): Transition: 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. BASF-specific outcomes were derived from variation of customer industry growth rates within said scenarios, using additional inhouse calculation tools. Preliminary results will be discussed with BASF Operating Divisions (OD). Physical: Data on changes in a range of environmental impact factors (e.g. precipitation, heat, drought) under an RCP2.6, RCP4.5 & RCP8.5 scenario were compiled by the external service provider for the geolocations of the 10 BASF sites. Results were used in discussions with site representatives to assess potential levels of change and sites' corresponding responses. Examples for assumptions: Transition: i.a. relative impact of regulation vs. CO2 price driven changes in energy markets or development of regional share of electric vehicles. Physical: Level of GHG emissions driving global warming and subsequent impacts. Time horizons + relevance to BASF: Transition: Projections were made up to 2050, as climate policy targets and strategic planning horizons for carbon abatement projects often refer to this time frame. Physical: Focus of assessment was on 2050 scenario data in line with the transition perspective. Covered areas: Transition: Analyses cover all major regions, countries and customer industries of BASF. Physical: 10 pilot sites distributed globally. Summary of results: Transition: Without taking behavioral changes into account, growth rates of major macroeconomic aggregates are quite resilient. Typical outcomes of simulations with high climate protection ambitions and significant behavioral changes are stable GDP growth rates with structural changes in industrial output and demand for chemicals. Physical: Scenario data indicate changes in environmental impact factors depending on 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 Gulf of Mexico area), vs. potentially emerging risks. Reporting / internal use: Transition: Scenarios are discussed internally in division-specific workshops. Feedback will be fed into further refinement of scenario results. Scenario-specific datasets are provided for testing the economic viability of investments and strategies in sensitivity analyses. Physical: Results are shared with pilot sites to drive internal discussion on resilience towards climate change. Impact case study: Situation: Standardized output from physical risk assessment proved to be suitable for an initial screening of climate change impacts at specific geolocations. Task: Scale up screening

	methodology in BASF operations with >250 production sites. Action: End of 2020 after completion of the pilot phase a range of commercially available climate risk assessment solutions were reviewed to find the ideal data basis for scaling up most efficiently. Result: BASF entered into an agreement with a service provider to acquire data for geolocations of all production sites to prepare for wider use of the initial screening.
Other, please specify (3 custom scenarios differentiated by level of circular economy action, increasing ambition)	Objective: Circular economy will become a key contributor to a low-carbon economy, transforming value chains and decoupling growth and resource consumption. Customer industries of BASF will be affected by this trend to a variable extent, and consequently the impact on BASF's value generation will also vary. The aim of the scenario analysis was to evaluate the impact in more detail. Methodology (scenario definition, inputs, analytical methods): The level of impact was assessed in three scenarios, for which the level of international policy response and action on circular economy, driven by climate change, is the main differentiator: (a) Base = business as usual, no change of regulation, (b) Moderate = known or expected changes of regulation lead to higher circularity, (c) Progressive = assumed more stringent regulation force a much higher level of circularity. The scenarios were applied to three major customer industries of BASF (automotive, construction, consumer goods, representing about 50% of total sales). For each scenario, key drivers of change were identified and underpinned by a set of assumptions about direction and magnitude of change, based on extensive literature research. Examples for assumptions: (1) automotive: number of shared cars, 80-fold increase from the base scenario to the progressive scenario; (2) construction: renovation rate, doubling from the base scenario to the progressive scenario; (3) consumer goods: percentage of arable land where precision farming is applied, four-fold increase from the base scenario to the progressive scenario. The impact of each scenario on the sales of each strategic business unit (SBU) of BASF was derived by allocating relevant scenario drivers to each SBU, assessing the direction and magnitude of the impact of the relevant drivers on each SBU, and calculating the financial impact relative to the base scenario. Time horizons + relevance to BASF: Projections were made up to 2030. This timeframe is of specific strategic relevance to BASF to ensure that asset structure and business models support future success in view of complex, uncertain boundary conditions and dynamics resulting from changing ambition for climate protection. Areas of BASF covered: The analysis covered all strategic business units (SBUs) of the entire BASF Group.

	Summary of results: Total BASF sales show significant upside potential in the moderate as well as in the progressive scenario. Construction trends have the strongest impact on BASF sales in the moderate scenario, whereas automotive trends have the strongest impact on sales in the progressive scenario. Reporting / internal use: Results were shared internally with representatives from operating divisions, which manage the SBUs, and relevant corporate units in the context of regular group meetings dedicated to sustainability topics. Reporting was limited to internal stakeholders. Results informed the next steps of the internal process for developing a BASF position and strategy regarding circular economy. The strategic approach, including the findings from the scenario analysis, was finally presented to and approved by the Board of Directors. The Board continues to monitor implementation of the strategic measures. Impact case study: Situation: Findings of scenario analysis show significant potential impact of circular economy on BASF business. Task: Promotion of strategic pilot projects in this area. Action: In 2020 we expanded our supply with pyrolysis oil chemically recycled from used tires with a partnership with New Energy and an investment of €16 million in Pyrum Innovations AG. Further, we launched a Circular Economy Program and announced the target to double our sales generated with circular economy solutions to €17 billion by 2030. Result: Strategic positioning for BASF in high potential business areas.
Other, please specify (Carbon pricing scenario for investments / existing assets)	Objective: Capital expenditure projects face financial risks due to potential national or regional legislation fostering the implementation or strengthening of a carbon price on emissions. Likewise, existing installations subject to (future) carbon pricing also require information on projected costs of carbon for their financial planning. The objective of the analysis was to assess the impact of carbon pricing on investments and existing installations. Methodology (scenario definition, inputs, analytical methods): A single scenario for carbon price development in the EU was developed based on extensive literature research of pricing assumptions, company-internal evaluation of regulatory drivers within the European Emissions Trading System, and consulting with external experts. The assumptions and scenario setup are reviewed annually by an internal expert group. Time horizons + relevance to BASF: Projections were made up to 2040. The long timeframe ensures that (a) the next phase(s) of the lifecycle of existing installations, and (b) the planning and installation

	period as well as the first years of plant operation of investment projects (which are specifically important in the assessment of profitability) are adequately covered. Areas of BASF covered: The scenario is applied to all existing installations and investment projects subject to (future) carbon regulation in the EU and case-by-case in other regions, depending on the likelihood of implementation of carbon pricing systems in these regions. Although based on EU assumptions, the scenario is applied globally based on the assumption that it represents a conservative global approach for the evaluation. Summary of results: The scenario shows an increasing carbon price up to 2040. The impact depends on the individual business case. Reporting / internal use: The scenario is available to all units in the operating divisions and at all regional and corporate levels involved in the complex multi-dimensional assessment process for capital expenditure projects. The process is coordinated by the Economic Evaluations group within our Corporate Development division. Further, the data are provided to the units responsible for the financial planning of existing installations. The findings from the scenario analysis complement the base case evaluation of the investment project and are forwarded to the internal decision-making bodies for review and consideration. Regarding existing installations, the projections for the price of EU ETS certificates are combined with estimates for the future demand for purchase of certificates, leading to estimated future costs of compliance with the EU ETS, which are integrated into the financial planning for each installation. Impact case study: The scenario data were taken over into the 2020 updates of the financial performance forecasts of our EU installations, which are the basis for operational and strategic steering of the individual assets (e.g. decisions on installation of greenhouse gas emissions abatement technology based on cost-benefit-analyses).

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 by

		being 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 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 2) and transport (e.g. materials for electric vehicles, see C2.4a Opp 3). In 2020, about 18% of total BASF sales can be attributed to products and solutions that make a particular contribution to climate protection. Sales of products potentially at risk have not been impacted so far. Time horizons considered: Analyses and steering consider short-, medium and long-term impacts on our business objectives. Case study: Situation: The transport industry is one of BASF's biggest customer industry (>20% of sales to this market in 2020) and in a massive transformation process towards lower-emission mobility solutions. Task: Develop a product portfolio to maintain and strengthen strategic partnerships with customers. Action: For long-term profitable growth, we set a growth focus on electromobility, which is creating a new major market for battery materials (growing at double-digit rate). Cathode materials account for as much as 70% of the material costs of a battery cell. BASF is already an established supplier. With our investments in Harjavalta (FI) and Schwarzheide (DE) we are the first company to lay the foundation for a European battery materials value chain. For these projects, we are receiving government funding as part of the Important Project of Common European Interest. Result: With the startup in 2022 we will produce cathode active materials for around 400,000 fully electric mid-size vehicles per year. BASF will be the only company producing battery materials in Asia, North America and Europe, putting us in a unique position to best serve our customers.

Supply chain and/or value chain	Yes	Influence on strategy: Purchase of energy, as part of our supply chain activities, accounts for about 15% of BASF's total Scope 1+2 emissions. Thus, it constitutes a significant strategic lever for reducing our emissions exposure in view of climate-related transition risks (e.g. higher costs through carbon regulation; reputation, see C2.3a Risk 1 & 3). We initiated measures to increase the share of renewables in the electricity purchased for our production sites, in support of our climate protection target. Also, as part of managing transition risks across the value chain, we have initiated strategic measures to speed up the transition to a circular economy, building on findings of our respective scenario analysis. We develop more "close the loop" solutions (i.e., turn waste into resources) via external partnerships and pilot projects. Further, we have started to increase 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 4). Time horizons considered: strategic levers bundled under Carbon Management cover short-, medium and long-term activities. Measures focusing on circular economy and resilience are expected to be effective short- to medium-term. Case study: Situation: Current/emerging regulation (e.g. the EU Green Deal) pushes the decoupling of growth from resource consumption. The chemical industry with its unique material and process knowledge is a key stakeholder in the transformation towards circular economy solutions. Task: In response to the increasing demand for more circular solutions (e.g. only one third of all plastic waste is kept in the materials cycle in EU28+2), BASF needs to develop and expand respective business models. Action: BASF bundled all activities driving value chain solutions for chemical recycling within the strategic ChemCycling project (e.g. investment into Quantafuel for pyrolysis of mixed plastic waste). Result: In 2020, we processed around 1,000 tons of recycled raw materials in the Verbund, saving the same amount of fossil resources. We plan to successively increase the use of recycled feedstocks over the coming years. The ChemCycling project will play a significant part in achieving BASF's target of using 250,000 tons of recycled and waste-based feedstocks annually from 2025 onward.
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 has derived three 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. The focus area (1) highlights directly that climate-related risks and opportunities have impacted the area of R&D investments, showing that BASF has focused and intensified this topic to come up with proper solutions (see C2.3a Risk 2 + C2.4a Opp 2, 3 & 4). We invest more than 40% of our annual R&D expenditures (2020: €2.086 billion total R&D expenses) on product and process innovations where the R&D target is related to energy/resource efficiency and climate protection. 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. Case study: Situation: Basic chemicals like hydrogen are indispensable cornerstones of many chemical value chains, but their production is emission-intensive: ten basic chemical production technologies cause ~50% of BASF's total GHG emissions. Task: Bundle R&D work to come up with breakthrough low-carbon production processes for basic chemicals to significantly reduce the GHG footprint of BASF and its products. Action: In the context of our Carbon Management R&D program, we are developing a 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. Further, we joined forces with SABIC and Linde to realize the world's first electrically heated steam cracker furnace. Result: The climate-friendly production processes contribute to significant emission reductions along the value chains depending on the basic chemicals. They will thus help BASF in improving its corporate carbon footprint and our customers in advancing their sustainable solutions.
Operations	Yes	Influence on strategy: BASF operates plants that are liable to Emission Trading Schemes, indicating that carbon pricing as a regulatory risk has already materialized to some extent and can be expected to become even 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 through 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. Further, we have started to increase 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 4). 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. Case study: Situation: In order to achieve its climate protection target and mitigate risks from increasing carbon costs, BASF needs to promote emission reduction measures across global operations. Task: Leverage cost-effective emission reduction potentials in operations through systematic operational excellence (opex) programs. Action: Establishment of a corporate opex team promoting the collection, assessment, approval and implementation of global opex measures, supported by a globally harmonized IT infrastructure. A dedicated budget for opex measures supports the effort. Moreover, in 2020 we finalized the introduction of certified energy management systems (ISO 50001) at all relevant production sites, which represent 91% of BASF's primary energy demand. Result: Opex contributes robustly towards improving BASF's emission performance. For example, in the last five years we have reported between 100 and 300 measures per year that increase energy efficiency in processes (total saving approx. 670,000 t CO2e).

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 as well as from 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 focus area of R&D are "resources, environment and climate". We invest more than 40% of our annual R&D expenditures (€2.086 billion total R&D expenses in 2020) 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 active portfolio steering towards solutions in line with our purpose and the societal needs during the transition to a low-carbon economy is also expected to contribute positively to our sales. In 2020, about 18% of total BASF sales can be attributed to products and solutions that make a particular contribution to climate protection and energy efficiency (Accelerators "Climate Change and Energy" within our portfolio steering approach "Sustainable Solution Steering"). We aim to achieve €22 billion in total Accelerator sales by 2025. We expect Accelerator sales to increase to between €18 billion and €19 billion in 2021 (2020: €16.7 billion). Time horizon covered: Revenue streams are primarily assessed for the short- to 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 €100-200 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 (STAR-approach): 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 fourth trading period as input to financial planning for these assets. Action: A corporate team evaluates the impact of current and future regulation on the level of free allowances of the installations and estimates the demand for 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 can be derived: under the revised EU ETS Directive, free allocation of allowances may decrease in the order of 20-30%, translating into reduced free allocation of about 2.5 million allowances for BASF. At the same time ETS certificate prices may rise significantly during the 4th trading period. Calculating with an estimated range of carbon prices of €35-65, this results in a risk of about €100-200 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: 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 (integrating different technology approaches, if applicable) as well as the option to assess alternative risk scenario cases. Climate-related aspects can be attributed to any case depending on strategic goals as well as the expected likelihood and magnitude of impacts. In this way, climate-related aspects directly become a complementary component of the evaluation and decision scheme for business cases of the investment projects. For example, 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 level 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 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 and opportunities primarily in the areas of existing and emerging regulation, change of markets, and reputational impacts due to changing investor or customer perspectives. Some risks have a potentially substantive financial impact (e.g. reduced market valuation of more than €200 million in case of significant divestment of shares after a major reputational loss). However, we actively manage these risks (e.g. holding an open dialogue to prevent reputational damage) and we currently foresee no substantial impacts by the described risks and opportunities regarding investor valuation of BASF and our performance in relation to climate change on our access to capital. This is underlined by our good credit ratings, e.g. “A2/P-

		1/outlook stable" by Moody's and "A/A-1/outlook stable" by Standard and Poor's. 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 "A2/P-1/outlook stable" by Moody's and "A/A-1/outlook stable" by Standard and Poor's, BASF enjoys good credit ratings. Time horizon covered: The impact assessments have a focus on short- to medium-term time periods.

C3.4a

(C3.4a) Provide any additional information on how climate-related risks and opportunities have influenced your strategy and financial planning (optional).

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

Year target was set

2018

Target coverage

Company-wide

Scope(s) (or Scope 3 category)

Scope 1+2 (market-based)

Base year

2018

Covered emissions in base year (metric tons CO2e)

21,887,000

Covered emissions in base year as % of total base year emissions in selected Scope(s) (or Scope 3 category)

97

Target year

2030

Targeted reduction from base year (%)

0

Covered emissions in target year (metric tons CO2e) [auto-calculated]

21,887,000

Covered emissions in reporting year (metric tons CO2e)

20,805,000

% of target achieved [auto-calculated]

Target status in reporting year

Underway

Is this a science-based target?

Yes, we consider this a science-based target, but it has not been approved by the Science-Based Targets initiative

Target ambition

2°C aligned

Please explain (including target coverage)

We want to achieve CO2-neutral growth until 2030. In other words, from 2019 to 2030 we aim to maintain total greenhouse gas emissions from our production sites and our energy purchases at the 2018 level (21.9 million metric tons of CO2 equivalents) while increasing production. 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 applied in the reporting year but has been updated in 2021: Based on the most recent progress in developing low-emission and CO2-free technologies, we now want to reduce our greenhouse gas emissions worldwide by 25% until 2030 compared with 2018. Moreover, we want to achieve net zero emissions by 2050.

C4.2

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

Other climate-related target(s)

C4.2b

(C4.2b) Provide details of any other climate-related targets, including methane reduction targets.

Target reference number

Oth 1

Year target was set

2015

Target coverage

Company-wide

Target type: absolute or intensity

Intensity

Target type: category & Metric (target numerator if reporting an intensity target)

Energy consumption or efficiency

Other, please specify

Primary energy demand of sites covered by energy management systems in accordance with ISO 50001

Target denominator (intensity targets only)

Other, please specify

Total primary energy demand

Base year

2015

Figure or percentage in base year

39.5

Target year

2020

Figure or percentage in target year

90

Figure or percentage in reporting year

91

% of target achieved [auto-calculated]

101.9801980198

Target status in reporting year

Achieved

Is this target part of an emissions target?

No

Is this target part of an overarching initiative?

No, it's not part of an overarching initiative

Please explain (including target coverage)

By 2020, we achieved our goal of introducing certified energy management systems (DIN EN ISO 50001) at all relevant production sites. The selection of relevant sites is determined by the amount of primary energy used and local energy prices. Taken together, this represents 91% of BASF's primary energy demand. +++ Note that BASF has not officially defined a base year for this target. We focus on achieving a 90% coverage of our primary energy demand through certified energy management systems in 2020. In the CDP questionnaire, we set the start year as base year to allow for showing a base year KPI and calculating the level of progress.

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	51	
To be implemented*	431	334,000
Implementation commenced*	231	295,000
Implemented*	522	187,000
Not to be implemented	112	

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)

123,000

Scope(s)

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

Voluntary/Mandatory

Voluntary

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

13,897,000

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

15,036,000

Payback period

1-3 years

Estimated lifetime of the initiative

Ongoing

Comment

In 2020, our production sites have implemented 247 measures worldwide that result in savings of fuel, electricity, steam, cooling water etc. Projects included a wide range of energy conservation measures, e.g. chemical process modifications, additional process heat integration, advanced process control systems implementation, fuel switches to lower carbon footprint, boiler efficiency upgrades, optimization in steam systems. In our TDI plant in Ludwigshafen, for example, we could remove a permanent heating system by upgrading parts of the equipment which saved significant steam consumption with almost 7,000 metric tons CO2 emissions reduction. In China we reduced our steam demand by optimizing steam traps at the Caojing site and installing a steam cooler at the Nanjing site, saving this way together 4,300 metric tons CO2. In the United States, we saved electricity by replacing a cooling tower at the Geismar site and modernizing a chilling unit in Freeport reducing CO2 emission by 2,300 metric tons.
Monetary savings reported here stem from reduced energy consumption and relate only to those measures implemented in 2020. 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)

2,000

Scope(s)

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 a new green contract in 2020 at a site in the Netherlands.

Initiative category & Initiative type

Waste reduction and material circularity

Waste reduction

Estimated annual CO2e savings (metric tonnes CO2e)

1,000

Scope(s)

Scope 1

Scope 3

Voluntary/Mandatory

Voluntary

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

8,535,000

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

4,334,000

Payback period

<1 year

Estimated lifetime of the initiative

Ongoing

Comment

In 2020 we were able to implement 115 measures with focus on waste reduction at sites worldwide. For example, at a batch process plant at Nanjing / PR China a yearly amount of more than 200 metric tons of CO2 emissions could be avoided through optimization of the production mode switch with reduction of liquid waste.

Initiative category & Initiative type

Other, please specify

Other, please specify

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)

61,000

Scope(s)

Scope 3

Voluntary/Mandatory

Voluntary

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

27,191,000

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

24,281,000

Payback period

<1 year

Estimated lifetime of the initiative

Ongoing

Comment

In 2020 we were able to implement 159 measures in order to reduce the raw material consumption. In our Antwerp site we recovered a component from a residue which avoids incineration and can be reinserted as raw material into the process, avoiding 5,000 metric tons CO2 per year. In our Kuantan site we successfully adapted a measure from Ludwigshafen site and recovered a component from a waste stream by rectification and used it as raw material for aroma chemicals, thus resulting in avoided CO2 emissions of about 3,400 metric tons/yr.

C4.3c

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

Method	Comment
Dedicated budget for low-carbon product R&D	We invest more than 40% of our annual R&D expenditures (€2.086 billion total R&D expenses in 2020) on product and process innovations where the R&D target is related to energy/resource efficiency and climate protection. For example, 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.
Financial optimization calculations	We use WRIS, an economic analysis and information system tool, as the standard tool for the valuation of capital expenditure projects, research and development projects, and for production cost calculations. The project valuation is carried out based on the discounted cash flow methodology. In a sensitivity analysis, the effects of varying assumptions on the project value can be checked. A price for carbon is included in the calculations.
Internal price on carbon	Carbon pricing plays a role in internal assessments on 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.
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, specific employee

	events or a specific employee suggestion scheme targeted at climate protection.
Compliance with regulatory requirements/standards	BASF complies with the regulatory requirements resulting from emission trading systems, e.g. in the EU, China, South Korea. Moreover, compliance with air quality regulations can have an impact on 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.
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.

C4.5

(C4.5) Do you classify any of your existing goods and/or services as low-carbon products or do they enable a third party to avoid GHG emissions?

Yes

C4.5a

(C4.5a) Provide details of your products and/or services that you classify as low-carbon products or that enable a third party to avoid GHG emissions.

Level of aggregation

Group of products

Description of product/Group of products

BASF products are involved in many climate protection technologies. Therewith we enable energy efficiency and climate protection in a variety of sectors, such as in the construction industry, in the automotive industry, and in industrial processes. Our climate protection products include but are not limited to the following product examples. +++ Building and Living: Chemical insulation materials based on expanded polystyrene such as Neopor® and Styropor® or extruded polystyrene such as Styrodur® have excellent thermal insulation properties. +++ Mobility: BASF's innovative integrated process technology for OEM coating reduces the number of applied layers through integrating the primer functionality into the basecoat layer, thereby leading to shorter coating processes. This results in measurable energy and resource savings and in a reduction of CO2e as well as VOC emissions. +++ Industry: BASF catalysts decompose nitrous oxide from production of nitric acid and adipic acid. The catalyst transforms the highly potent greenhouse gas nitrous oxide almost completely into the components of air, nitrogen and oxygen. +++ Energy Generation: Wind and solar power help to mitigate greenhouse gas emissions. BASF products contribute to making technologies for generating energy from wind and sun more efficient, such as epoxy systems and other materials to produce rotor blades, grouting materials for the construction of the

foundation of wind turbines or sodium nitrate as thermal energy storage media for all concentrated solar power technologies. +++ Agriculture: The ammonium stabilizer DMPP is the main component in BASF's Vizura® fertilizer additive, which helps to increase plant uptake efficiency. This reduces the use of fertilizers or liquid manure and cuts nitrous oxide emissions by 50% on average.

Are these low-carbon product(s) or do they enable avoided emissions?

Avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

Addressing the Avoided Emissions Challenge- Chemicals sector

% revenue from low carbon product(s) in the reporting year

18

Comment

Our calculations of avoided GHG emissions are based on the chemical industry standard of the International Council of Chemical Associations (ICCA) and the World Business Council for Sustainable Development (WBCSD), published in 2013 and revised in 2017. Avoided emissions are the difference in life cycle greenhouse gas emissions from two alternative solutions for achieving the same user benefit.

C5. Emissions methodology

C5.1

(C5.1) Provide your base year and base year emissions (Scopes 1 and 2).

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

C5.2

(C5.2) 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)

18,395,000

Comment

C6.2

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

Row 1

Scope 2, location-based

We are reporting a Scope 2, location-based figure

Scope 2, market-based

We are reporting a Scope 2, market-based figure

Comment

C6.3

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

Reporting year

Scope 2, location-based

3,362,000

Scope 2, market-based (if applicable)

3,279,000

Comment

C6.4

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

Source

GHG emissions from mobile combustion

Relevance of Scope 1 emissions from this source

Emissions are not relevant

Relevance of location-based Scope 2 emissions from this source

No emissions from this source

Relevance of market-based Scope 2 emissions from this source (if applicable)

No emissions from this source

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).

Source

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

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 (if applicable)

Emissions are not relevant

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 extrapolated to be less than 1%, which we consider to be insignificant. We periodically reassess the contribution from our administrative sites. GHG emissions from assets leased by BASF are accounted for as Scope 3 emissions.

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

Metric tonnes CO2e

47,753,000

Emissions calculation methodology

(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 2012 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, AR5, 2013. (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 by the GHG conversion factors from the Defra 2012 Guidelines.

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

0

Please explain

-

Capital goods

Evaluation status

Relevant, calculated

Metric tonnes CO2e

1,722,000

Emissions calculation methodology

(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 2012 Guidelines to DEFRA/DECC's GHG Conversion Factors for Company Reporting, Annex 13 (Indirect emissions from supply chain). (iii) GWP values: GWP values referring to the time horizon of 100 years were taken from IPCC, AR5, 2013. (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 2003). The amount of spending was then multiplied by the respective GHG

conversion factor and subsequently added up to the total GHG emissions from capital goods.

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

0

Please explain

-

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

Evaluation status

Relevant, calculated

Metric tonnes CO2e

3,119,000

Emissions calculation methodology

(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, Monthly OECD Electricity Statistics (Sept 2020). (iii) GWP values: GWP values referring to the time horizon of 100 years were taken from IPCC, AR5, 2013. (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 based on the fuel shares of electricity generation (IEA, Key World Energy Statistics, 2020). The fuel shares were then multiplied by the respective 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.

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

0

Please explain

-

Upstream transportation and distribution

Evaluation status

Relevant, calculated

Metric tonnes CO2e

2,462,000

Emissions calculation methodology

(i) Activity data: Quantities, types of goods and regional split of purchase in the reporting year were obtained from BASF internal business data management systems. For assessing BASF's internal transports additional information such as origin and destination points, mode of transport and load factors was retrieved from the systems. (ii) Emissions factors: The CO2 emission factors used were taken from the McKinnon Report: "Measuring and Managing CO2 Emissions from the Transport of Chemicals in Europe". 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 referring to the time horizon of 100 years were taken from IPCC, AR5, 2013. (iv) Methodology & assumptions: GHG emissions associated with the transport of raw materials were calculated by multiplying the quantities of products procured by a transportation distance and by an emissions factor for the mode of transport. For all procured products in Europe, the modal split from the McKinnon Report for chemical transports was used. Transportation distances in each region were estimated by logistics experts. Distance for the transport of industrial gases was assumed to be 0.5 km since most of the gases are produced on-site. Distance for the transport of natural gas was assumed to be 1,000 km. GHG emissions associated with the transportation of technical & capital goods purchased by BASF were calculated based on an assumed 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. Solely truck transportation and an average transportation distance of 500 km (1,000 km in USA) were assumed. The GHG emissions from BASF internal transports were calculated based on detailed transportation data using the IT solution EcoTransIT World.

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

0

Please explain

-

Waste generated in operations

Evaluation status

Relevant, calculated

Metric tonnes CO2e

1,343,000

Emissions calculation methodology

(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, AR5, 2013. (iv) Methodology & assumptions: The GHG emissions from on-site waste incineration and on-site physical recovery are accounted for in our Scope 1 emissions. The off-site physical recovery (recycling) of waste is assigned zero emissions in line with the cut-off approach of 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 with 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.

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

0

Please explain

-

Business travel

Evaluation status

Not relevant, calculated

Metric tonnes CO2e

34,000

Emissions calculation methodology

(i) Activity data: Miles and kilometers per means of transportation, travelled by BASF employees in the reporting year were collected by external partners such as travel agencies and provided to BASF's Travel Management. For some travel activities the travel providers directly reported the amount of emitted greenhouse gases for the reporting year (applies to rail travel in Germany and most trips by rental car). (ii) Emissions factors: CO2e emissions factors for short-haul, medium-haul and long-haul flights were taken from DEFRA's GHG Conversion Factors for Company Reporting (2020). CO2e emissions factors for travel with train per country were taken from: SNCF, 2020 for France; Thalys Network, 2017 for Belgium; Ferrovie dello stato italiane, 2019 for Italy; ÖBB, 2018/2019 for Austria; DEFRA, 2020 for UK; EPA, 2020 for the US; Via Rail, 2019 for Canada; IEA Railway Handbook, 2017 and the India GHG Program, 2015 for Asia Pacific. (iii) GWP values: GWP values referring to the time horizon of 100 years were taken from IPCC, AR5, 2013. (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, which are collected through external partners such as travel agencies and monitored by BASF's Travel Management, were converted to CO2 equivalents using conversion factors for the average passenger in shorthaul, medium-haul and long-haul flights. b) GHG emissions from business travel by train: Rail miles that are collected through external partners such as travel agencies and monitored by our Travel Management were converted into CO2e emissions using country-specific and/or railway-specific CO2e conversion factor for travel by train; for rail travel in Germany the external partner Deutsche Bahn directly reports the resulting GHG emissions zero emissions due to 100% green power). (c) GHG emissions from business travel by car: For most trips the external partners (i.e. car rental companies) provided a summary of kilometers driven and the resulting GHG emissions for the reporting year. One provider supplied data solely on kilometers driven. These were converted into GHG emissions by multiplying with the average car travel emission factor.

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

5

Please explain

-

Employee commuting

Evaluation status

Not relevant, calculated

Metric tonnes CO2e

147,000

Emissions calculation methodology

(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 (2020) for employee commuting in Europe and Asia and from EPA's mission Factors for Greenhouse Gas Inventories (2020) for North and South America. (iii) GWP values: GWP values referring to the time horizon of 100 years were taken from IPCC, AR5, 2013. (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. GHG emissions were calculated by multiplying the travelled distance (220 days per year, back and forth) with 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 236 days per year and 30 kilometers one-way. For Asia and South America, it was assumed that all employees travel a distance of 30 km by car (one-way) and 230 or 222 days per year, respectively. The corresponding emissions were calculated by multiplying the distance with the number of employees, number of working days and an average emission factor for cars per km Due to the corona pandemic, working from home was established in all BASF regions. In 2020 36% of all employees worked from home for a period of 9 months and hence did not commute to work. This fact was considered in the calculations of GHG emissions from employee commuting.

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

0

Please explain

-

Upstream leased assets

Evaluation status

Not relevant, calculated

Metric tonnes CO2e

169,000

Emissions calculation methodology

(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, 2012). For Asia, it was taken from a study by Ding et al., 2017. Region-specific CO2 emissions factors per MWh were obtained from IEA, 2020. CO2e emissions factors per MWh of heat from natural gas and light fuel oil were obtained from GaBi database. Emission factors for leased equipment were taken from the 2012 Guidelines to DEFRA/DECC's GHG Conversion Factors for Company Reporting, Annex 13 (Indirect emissions from supply chain). (iii) GWP values: GWP values referring to the time horizon of 100 years were taken from IPCC, AR5, 2013. (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 and the corresponding GHG conversion factors.

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

0

Please explain

-

Downstream transportation and distribution

Evaluation status

Relevant, calculated

Metric tonnes CO2e

1,237,000

Emissions calculation methodology

(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 referring to the time horizon of 100 years were taken from IPCC, AR5, 2013. (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.

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

0

Please explain

-

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

Metric tonnes CO2e

5,951,000

Emissions calculation methodology

(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 5th Assessment Report, IPCC, 2013. 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 solution for diesel engines) 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 liquid 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).

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

0

Please explain

-

End of life treatment of sold products

Evaluation status

Relevant, calculated

Metric tonnes CO2e

23,911,000

Emissions calculation methodology

(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 (2018), OECD Statistics (2012, 2015) and the Chinese National Bureau of Statistics. (ii) Emissions factors: not applicable. (iii) GWP values: GWP values referring to the time horizon of 100 years were taken from IPCC, AR5, 2013. (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 in line with the cut-off approach of 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 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.

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

0

Please explain

-

Downstream leased assets

Evaluation status

Not relevant, calculated

Metric tonnes CO2e

100,000

Emissions calculation methodology

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

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

0

Please explain

-

Franchises

Evaluation status

Not relevant, explanation provided

Please explain

Not relevant as BASF does not own or operate franchises.

Investments

Evaluation status

Relevant, calculated

Metric tonnes CO2e

3,438,000

Emissions calculation methodology

(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: GWP values referring to the time horizon of 100 years were taken from IPCC, AR5, 2013. (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. However, 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%.

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

100

Please explain

-

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	24,000	Burning of nut shells in boiler at Mangalore, India; burning of sewage for generation of heat and electricity at Ludwigshafen, Germany

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

0.000366

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

21,674,000

Metric denominator

unit total revenue

Metric denominator: Unit total

59,149,000,000

Scope 2 figure used

Market-based

% change from previous year

8.6

Direction of change

Increased

Reason for change

BASF's GHG emissions per unit total revenue increased by 8.6% in 2020 compared with 2019. The absolute Scope 1 and Scope 2 emissions increased by 4.0% while revenues decreased by 4.4% (-€2.7 billion), resulting in an overall very strong increase of the indicator value. The decline in revenues was attributable to lower volumes (mainly due to business declining during Covid-19-pandemic) and negative currency effects. The Chemicals, Materials and Industrial Solutions segments, in particular recorded lower sales volumes.

The net increase of emissions in 2020 constitutes of
a) Factors leading to higher emissions: acquisitions (accounting for +2.1% of Scope 1+2 emissions, e.g. the acquisition of carbon-intensive polyamide business from Solvay) and changes in local operating conditions (+7.7%, e.g. large assets returning from turnaround in 2019 to (almost) normal production and emissions in 2020, reduced plant efficiency due to Covid-19 business impact).
b) Factors lowering emissions: emission reduction measures (accounting for -0.6% of Scope 1+2 emissions), lower output (-4.8%), and divestments (-0.4%).

Emission reduction measures comprise a wide range of activities. For example, we implemented 247 individual energy efficiency measures in different plants all over the world. They resulted in savings of fuel, electricity, steam, cooling water and ultimately GHG emissions of 123,000 t CO2e. Projects included numerous energy conservation measures, e.g. chemical process modifications, additional process heat integration, advanced process control systems implementation, fuel switches to lower carbon footprint, boiler efficiency upgrades, optimization in steam systems. In our TDI plant in

Ludwigshafen, for example, we removed a permanent heating system which saved significant steam consumption with almost 7,000 t in CO2 emissions reduction. In China we reduced our steam demand by optimizing steam traps at the Caojing site and installing a steam cooler at the Nanjing site, saving this way together 4,300 t CO2. Measures from employee suggestions schemes helped reducing emissions by another 12,000 t. The suggested measures plus the above-mentioned energy efficiency measures are consolidated under emission reduction activities, which totalled at 135,000 t (-0.6%). Further, additional renewable energy use decreased emissions by 2000 t (-0.01%).

Intensity figure

200.1

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

21,674,000

Metric denominator

full time equivalent (FTE) employee

Metric denominator: Unit total

108,320

Scope 2 figure used

Market-based

% change from previous year

10.9

Direction of change

Increased

Reason for change

BASF increased its GHG emissions per FTE employee in 2020 compared with 2019 by 10.9%. The number of FTE employees decreased by 6.2% while absolute Scope 1 and Scope 2 emissions increased by 4.0%, resulting in a strong increase of the indicator value. The decrease in the number of employees was primarily due to the sale of the construction chemicals business, which affected around 7,500 employees. An offsetting factor was the acquisition of Solvay's polyamide business due to which the BASF Group's number of employees rose by around 1,200 people – including the employees of the Butachimie SNC and Alsachimie S.A.S. joint operations, both in Chalampé, France – which were counted on a pro rata basis.

The net increase of emissions in 2020 constitutes of
a) Factors leading to higher emissions: acquisitions (accounting for +2.1% of Scope 1+2 emissions, e.g. the acquisition of carbon-intensive polyamide business from Solvay) and changes in local operating conditions (+7.7%, e.g. large assets returning from turnaround in 2019 to (almost) normal production and emissions in 2020, reduced plant

efficiency due to Covid-19 business impact).
b) Factors lowering emissions: emission reduction measures (accounting for -0.6% of Scope 1+2 emissions), lower output (-4.8%), and divestments (-0.4%).

Emission reduction measures comprise a wide range of activities. For example, we implemented 247 individual energy efficiency measures in different plants all over the world. They resulted in savings of fuel, electricity, steam, cooling water and ultimately GHG emissions of 123,000 t CO2e. Projects included numerous energy conservation measures, e.g. chemical process modifications, additional process heat integration, advanced process control systems implementation, fuel switches to lower carbon footprint, boiler efficiency upgrades, optimization in steam systems. In our TDI plant in Ludwigshafen, for example, we removed a permanent heating system which saved significant steam consumption with almost 7,000 t in CO2 emissions reduction. Measures from employee suggestions schemes helped reducing emissions by another 12,000 t. The suggested measures plus the above-mentioned energy efficiency measures are consolidated under emission reduction activities, which totalled at 135,000 t (-0.6%). Further, additional renewable energy use decreased emissions by 2000 t (-0.01%).

Intensity figure

0.639

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

20,805,000

Metric denominator

Other, please specify

Metric ton of sales product

Metric denominator: Unit total

32,563,000

Scope 2 figure used

Market-based

% change from previous year

11.3

Direction of change

Increased

Reason for change

Note: This intensity figure refers to GHG emissions and volume of sales products for BASF without emissions related to the generation of steam and electricity for sale to third parties, matching the scope relevant for our corporate climate protection target. BASF increased its GHG emissions per metric ton of sales products in 2020 compared to 2019 by 11.3% (2019: 0.574 tons CO2e per ton of sales product vs. 2020: 0.639 tons

CO2e per ton of sales product). The volume of sales products from businesses within the reporting boundary decreased by 6.9%. The relevant Scope 1 and 2 emissions (BASF without emissions related to the generation of steam and electricity for sale to third parties) increased by 3.6% in 2020.

The net increase of emissions in 2020 constitutes of
a) Factors leading to higher emissions: acquisitions (e.g. the acquisition of carbon-intensive polyamide business from Solvay) and changes in local operating conditions (e.g. large assets returning from turnaround in 2019 to (almost) normal production and emissions in 2020, reduced plant efficiency due to Covid-19 business impact).
b) Factors lowering emissions: emission reduction, lower output, and divestments.

Emission reduction measures comprise a wide range of activities. For example, we implemented 247 individual energy efficiency measures in different plants all over the world. They resulted in savings of fuel, electricity, steam, cooling water and ultimately GHG emissions of 123,000 t CO2e. Projects included numerous energy conservation measures, e.g. chemical process modifications, additional process heat integration, advanced process control systems implementation, fuel switches to lower carbon footprint, boiler efficiency upgrades, optimization in steam systems. In our TDI plant in Ludwigshafen, for example, we removed a permanent heating system which saved significant steam consumption with almost 7,000 t in CO2 emissions reduction. Measures from employee suggestions schemes helped reducing emissions by another 12,000 t. The suggested measures plus the above-mentioned energy efficiency measures are consolidated under emission reduction activities, which totalled at 135,000 t. Further, additional renewable energy use decreased emissions by 2000 t.

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	17,729,000	IPCC Fourth Assessment Report (AR4 - 100 year)
CH4	25,000	IPCC Fourth Assessment Report (AR4 - 100 year)

N2O	609,000	IPCC Fourth Assessment Report (AR4 - 100 year)
Other, please specify Sum HFCs	32,000	IPCC Fourth Assessment Report (AR4 - 100 year)

C7.2

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

Country/Region	Scope 1 emissions (metric tons CO2e)
Belgium	3,670,000
Brazil	130,000
China	417,000
France	339,000
Germany	8,250,000
India	21,000
Italy	52,000
Japan	12,000
Republic of Korea	337,000
Spain	32,000
United States of America	4,311,000
Other, please specify Rest of world	824,000

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	7,648,000	49.49594	8.431191
Antwerp, Belgium	3,670,000	51.32405	4.285598
Kuantan, Malaysia	527,000	3.967425	103.4237
Freeport, USA	876,000	29.00441	-95.3933
Geismar, USA	817,000	30.21022	-91.0345
Rest of world	4,857,000		

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	17,526,000	

C7.5

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

Country/Region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low-carbon electricity, heat, steam or cooling accounted for in Scope 2 market-based approach (MWh)
Belgium	182,000	181,000	945,000	0
Brazil	22,000	22,000	307,000	0
China	820,000	820,000	1,829,000	0
France	40,000	37,000	318,000	0
Germany	403,000	342,000	1,671,000	12,000
India	43,000	43,000	55,000	0
Italy	6,000	8,000	22,000	0
Japan	66,000	71,000	162,000	0
Republic of Korea	291,000	291,000	829,000	0
Spain	22,000	24,000	112,000	0
United States of America	870,000	858,000	2,730,000	25,000
Other, please specify Rest of world	597,000	582,000	1,596,000	65,000

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	6,000	6,000
Antwerp, Belgium	182,000	181,000
Kuantan, Malaysia	223,000	223,000
Freeport, USA	73,000	73,000
Geismar, USA	74,000	74,000
Rest of world	2,804,000	2,722,000

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	3,362,000	3,279,000	

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)	20	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. (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. (iii) GWP values: GWP values referring to the time horizon of 100 years were taken from IPCC, AR5, 2013. (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)		BASF is selling carbon dioxide, e.g. to the beverage industry. Sales figures are considered confidential business information.
Methane (CH4)	0	Sales of natural gas (with the main component being methane) through discontinued oil and gas business fall outside the reporting boundary.
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?

Increased

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	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	2,000	Decreased	0.01	BASF's Scope 1 and Scope 2 emissions decreased by 2,000 metric tons (t) of CO2e in 2020 compared to 2019 due to additional purchase of renewable energy in 2020. Many sites had switched to renewable electricity in 2019, less in 2020. That is why the decrease appears small. Our total Scope 1 and Scope 2 emissions in 2019 were 20,842,000 t CO2e, therefore we arrived at 0.01% ((2,000/20,842,000)*100 = 0.01%). The CO2 savings resulted from a new green contract in 2020 at a site in the Netherlands.
Other emissions reduction activities	135,000	Decreased	0.6	BASF's Scope 1 and Scope 2 emissions decreased by 135,000 metric tons (t) of CO2e in 2020 compared to 2019 due to emissions reduction activities implemented in 2020. Our total Scope 1 and Scope 2 emissions in 2019 were 20,842,000 t CO2e, therefore we arrived at 0.6% through (135,000/20,842,000)*100 = 0.6%. In 2020, our production sites have implemented 247 measures worldwide that result in savings of fuel, electricity, steam, cooling water etc. Projects included a wide range of energy conservation measures, e.g. chemical process modifications, additional process heat integration, advanced process control systems implementation, fuel switches to lower carbon footprint, boiler efficiency upgrades, optimization in steam systems. In our TDI plant in Ludwigshafen, for example, we could remove a permanent heating system by upgrading parts of the

				equipment which saved significant steam consumption with almost 7,000 t CO2 emissions reduction. In China we reduced our steam demand by optimizing steam traps at the Caojing site and installing a steam cooler at the Nanjing site, saving this way together 4,300 t CO2. In the United States, we saved electricity by replacing a cooling tower at the Geismar site and modernizing a chilling unit in Freeport reducing CO2 emission by 2,300 t.
Divestment	74,000	Decreased	0.4	The emissions from our operations decreased by 0.4% (corresponding to 74,000 metric tons of CO2e) in 2020 compared to 2019 due to the divestment of our construction chemical business, affecting production sites in several countries (e.g. Germany, USA). Our total Scope 1 and Scope 2 emissions in 2019 were 20,842,000 t CO2e, therefore we arrived at 0.4% through (74,000/20,842,000)*100 = 0.4%.
Acquisitions	429,000	Increased	2.1	The emissions from our operations increased by 2.1% (corresponding to 429,000 metric tons of CO2e) in 2020 compared to 2019 due to the acquisition of carbon-intensive polyamide business from Solvay in January 2020. The new sites started reporting emissions in 2020, which led to the increase compared to 2019. Our total Scope 1 and Scope 2 emissions in 2019 were 20,842,000 t CO2e, therefore we arrived at 2.1% through (429,000/20,842,000)*100 = 2.1%.
Mergers	0	No change	0	Category not relevant in actual year-on-year comparison.
Change in output	1,000,000	Decreased	4.8	In 2020 the volume of production from the operations within the reporting boundary decreased in comparison to 2019, with the Covid-19-crisis being a major driver of this decrease. Assuming that the GHG intensity of our various businesses in 2019 had continued to apply in 2020, the lower production would have resulted in a

				decrease in Scope 1 and Scope 2 GHG emissions of 4.8% (corresponding to 1,000,000 metric tons of CO2e) in 2020 in comparison to 2019. Our total Scope 1 and Scope 2 emissions in 2019 were 20,842,000 t CO2e, therefore we arrived at 4.8% through (1,000,000/20,842,000)*100 = 4.8%.
Change in methodology	0	No change	0	In 2019 we applied new balancing rules in the energy supply and demand management across several sites. We kept these rules in 2020.
Change in boundary	0	No change	0	Category not relevant in actual year-on-year comparison.
Change in physical operating conditions	0	No change	0	Category not relevant in actual year-on-year comparison.
Unidentified	0	No change	0	Category not relevant in actual year-on-year comparison.
Other	1,614,000	Increased	7.7	BASF is accounting 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 2020, changes in local operating conditions resulted in a net increase of emissions of 7.7% (corresponding to 1,614,000 metric tons of CO2e) compared to 2019. Our total Scope 1 and Scope 2 emissions in 2019 were 20,842,000 t CO2e, therefore we arrived at 7.7% through (1,614,000/20,842,000)*100 = 7.7%. A major share of the strong change can very likely be attributed to the Covid-19-crisis. With many processes running less efficiently when forced to have less output

				this effect also leads to an overall increasing GHG emissions intensity. At the Ludwigshafen site for example the GHG emissions intensity (on t CO2e per t of product basis) increased by more than 8% leading to increased emissions of 587,000 t compared to calculation with 2019 intensity. Intensity fluctuations due to major turnarounds are judged to be another important driver. Two major sites (Port Arthur and Antwerp) returned to normal production in 2020 after turnarounds in 2019, leading to an estimated total of 1,329,000 t of additional emissions compared to extrapolating 2019 performance to 2020. This effect is not captured by any of the other abovementioned categories.

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)	13,000	50,663,000	50,676,000
Consumption of purchased or acquired electricity		102,000	5,319,000	5,421,000
Consumption of purchased or acquired steam		0	5,155,000	5,155,000
Consumption of self-generated non-fuel renewable energy		1,500		1,500
Total energy consumption		116,500	61,137,000	61,253,500

C-CH8.2a

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

	Heating value	Total MWh
Consumption of fuel (excluding feedstock)	LHV (lower heating value)	50,676,000
Consumption of purchased or acquired electricity		5,421,000
Consumption of purchased or acquired steam		5,155,000
Consumption of self-generated non-fuel renewable energy		1,500
Total energy consumption		61,253,500

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.

Fuels (excluding feedstocks)

Anthracite Coal

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

1,057,000

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

271,000

MWh fuel consumed for self-generation of steam

786,000

MWh fuel consumed for self-cogeneration or self-trigeneration

0

Emission factor

335

Unit

kg CO2 per MWh

Emissions factor source

Standard factors according Monitoring-Bericht RWI 1999, used by BASF internal guidelines

Comment

Fuels (excluding feedstocks)

Diesel

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

108,000

MWh fuel consumed for self-generation of electricity

4,000

MWh fuel consumed for self-generation of heat

38,000

MWh fuel consumed for self-generation of steam

66,000

MWh fuel consumed for self-cogeneration or self-trigeneration

0

Emission factor

266

Unit

kg CO2 per MWh

Emissions factor source

Standard factors according Monitoring-Bericht RWI 1999, used by BASF internal guidelines

Comment

Fuels (excluding feedstocks)

Distillate Oil

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

19,000

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

2,000

MWh fuel consumed for self-generation of steam

17,000

MWh fuel consumed for self-cogeneration or self-trigeneration

0

Emission factor

281

Unit

kg CO2 per MWh

Emissions factor source

Standard factors according Monitoring-Bericht RWI 1999, used by BASF internal guidelines

Comment

Fuels (excluding feedstocks)

Natural Gas

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

43,730,000

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

12,758,000

MWh fuel consumed for self-generation of steam

3,676,000

MWh fuel consumed for self-cogeneration or self-trigeneration

27,295,000

Emission factor

201

Unit

kg CO2 per MWh

Emissions factor source

Standard factors according Monitoring-Bericht RWI 1999, used by BASF internal guidelines

Comment

Fuels (excluding feedstocks)

Liquefied Petroleum Gas (LPG)

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

126,000

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

25,000

MWh fuel consumed for self-generation of steam

101,000

MWh fuel consumed for self-cogeneration or self-trigeneration

0

Emission factor

235

Unit

kg CO2 per MWh

Emissions factor source

Based on individually determined CO2 factors for each residue stream on site level, here averaged factor determined by each stream on each site with its CO2 emitted and MWh content

Comment

Fuels (excluding feedstocks)

Other, please specify

Residual fuels from own production

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

5,623,000

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

5,122,000

MWh fuel consumed for self-cogeneration or self-trigeneration

501,000

Emission factor

226

Unit

kg CO2e per MWh

Emissions factor source

Based on individually determined CO2 factors for each residue stream on site level, here averaged factor determined by each stream on each site with its CO2 emitted and MWh content

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	10,325,500	9,273,000	1,500	1,500
Heat	13,094,000	12,823,000	0	0
Steam	36,572,000	33,942,000	12,000	12,000
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.

	Total gross generation (MWh) inside chemicals sector boundary	Generation that is consumed (MWh) inside chemicals sector boundary
Electricity	10,325,500	9,273,000
Heat	13,094,000	12,823,000
Steam	36,572,000	33,942,000
Cooling	0	0

C8.2e

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

Sourcing method

Green electricity products (e.g. green tariffs) from an energy supplier, supported by energy attribute certificates

Low-carbon technology type

Wind

Country/area of consumption of low-carbon electricity, heat, steam or cooling

United States of America

MWh consumed accounted for at a zero emission factor

25,000

Comment

Sourcing method

Green electricity products (e.g. green tariffs) from an energy supplier, supported by energy attribute certificates

Low-carbon technology type

Other, please specify

(Mix hydro/wind)

Country/area of consumption of low-carbon electricity, heat, steam or cooling

Canada

MWh consumed accounted for at a zero emission factor

6,000

Comment

Mix of hydro and wind

Sourcing method

Green electricity products (e.g. green tariffs) from an energy supplier, supported by energy attribute certificates

Low-carbon technology type

Other, please specify

(Renewable electricity mix of different technology types)

Country/area of consumption of low-carbon electricity, heat, steam or cooling

Germany

MWh consumed accounted for at a zero emission factor

12,000

Comment

Renewable electricity mix of different technology types

Sourcing method

Green electricity products (e.g. green tariffs) from an energy supplier, supported by energy attribute certificates

Low-carbon technology type

Other, please specify

(Renewable electricity mix of different technology types)

Country/area of consumption of low-carbon electricity, heat, steam or cooling

United Kingdom of Great Britain and Northern Ireland

MWh consumed accounted for at a zero emission factor

8,000

Comment

Renewable electricity mix of different technology types

Sourcing method

Green electricity products (e.g. green tariffs) from an energy supplier, supported by energy attribute certificates

Low-carbon technology type

Other, please specify

(Renewable electricity mix of different technology types)

Country/area of consumption of low-carbon electricity, heat, steam or cooling

Ireland

MWh consumed accounted for at a zero emission factor

8,000

Comment

Renewable electricity mix of different technology types

Sourcing method

Green electricity products (e.g. green tariffs) from an energy supplier, supported by energy attribute certificates

Low-carbon technology type

Other, please specify

(Renewable electricity mix of different technology types)

Country/area of consumption of low-carbon electricity, heat, steam or cooling

Netherlands

MWh consumed accounted for at a zero emission factor

43,000

Comment

Renewable electricity mix of different technology types

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

9,100,000

Total consumption unit

metric tons

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

3

Heating value of feedstock, MWh per consumption unit

12.6

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	73
Natural Gas	20
Coal	2
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

High Value Chemicals (Steam cracking)

Production (metric tons)

Capacity (metric tons)

3,480,000

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

Electricity intensity (MWh per metric ton of product)

Steam intensity (MWh per metric ton of product)

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

Comment

Capacity refers to ethylene production and considers 100% capacity of the operations. BASF's share might be lower.

Output product

Ammonia

Production (metric tons)

Capacity (metric tons)

1,765,000

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

Electricity intensity (MWh per metric ton of product)

Steam intensity (MWh per metric ton of product)

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

Comment

Capacity considers 100% capacity of the operations. BASF's share might be lower.

Output product

Aromatics extraction

Production (metric tons)

Capacity (metric tons)

910,000

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

Electricity intensity (MWh per metric ton of product)

Steam intensity (MWh per metric ton of product)

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

Comment

Capacity refers to benzene production and considers 100% capacity of the operations. BASF's share might be lower.

Output product

Butadiene (C4 sep.)

Production (metric tons)

Capacity (metric tons)

680,000

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

Electricity intensity (MWh per metric ton of product)

Steam intensity (MWh per metric ton of product)

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

Comment

Capacity considers 100% capacity of the operations. BASF's share might be lower.

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	

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	Stage of development in the reporting year	Average % of total R&D investment over the last 3 years	R&D investment figure in the reporting year (optional)	Comment
Other, please specify (Product and process innovations where the R&D target is related to energy/resource efficiency and climate protection)	Applied research and development	41 - 60%		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 been more than 40% of the total annual R&D spend over the past years

				and targets product and process innovations related to energy/resource efficiency and climate protection.

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

BASF20_CDP Letter v2_final.pdf

Page/ section reference

1-3

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

BASF20_CDP Letter v2_final.pdf

Page/ section reference
1-3

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

BASF20_CDP Letter v2_final.pdf

Page/ section reference

1-3

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 (upstream & downstream)

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

BASF20_CDP Letter v2_final.pdf

Page/section reference

1-3

Relevant standard

ISAE3000

Proportion of reported emissions verified (%)

100

Scope 3 category

Scope 3 (upstream & downstream)

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

BASF20_CDP Letter v2_final.pdf

Page/section reference

1-3

Relevant standard

ISAE 3410

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	ISAE3000	Data point is given within our integrated annual report. All sustainability-related performance information according to GRI Standards (“Comprehensive“ application option) in the “BASF Report 2020", published under https://report.basf.com/2020/en/, were subject of the assurance engagement. +++ 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	ISAE3000, ISAE3410	Data point is given within our integrated annual report. All sustainability-related performance information according to GRI Standards (“Comprehensive” application option) in the “BASF Report 2020", published under https://report.basf.com/2020/en/, were subject of the assurance engagement. +++ 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)	ISAE3000	Data point is given within our integrated annual report. All sustainability-related performance information according to GRI Standards (“Comprehensive” application option) in the “BASF Report 2020", published under https://report.basf.com/2020/en/, were subject of the assurance engagement. +++ Reference to CDP question number: C7.9 +++ Type of verification and frequency: reasonable assurance, annual process
C8. Energy	Energy consumption	ISAE3000, ISAE3410	Data point is given within our integrated annual report. All sustainability-related performance information according to GRI Standards (“Comprehensive” application option) in the “BASF Report 2020", published under https://report.basf.com/2020/en/, were subject of the assurance engagement. +++ 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
Korea ETS
Shanghai pilot ETS
Switzerland carbon tax
Switzerland 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

52

% of Scope 2 emissions covered by the ETS

0

Period start date

January 1, 2020

Period end date

December 31, 2020

Allowances allocated

10,351,498

Allowances purchased

309,438

Verified Scope 1 emissions in metric tons CO2e

11,880,422

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 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 a 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.

Korea ETS

% of Scope 1 emissions covered by the ETS

2

% of Scope 2 emissions covered by the ETS

6.8

Period start date

January 1, 2020

Period end date

December 31, 2020

Allowances allocated

608,212

Allowances purchased

0

Verified Scope 1 emissions in metric tons CO2e

374,898

Verified Scope 2 emissions in metric tons CO2e

221,972

Details of ownership

Facilities we own and operate

Comment

Shanghai pilot ETS

% of Scope 1 emissions covered by the ETS

1.3

% of Scope 2 emissions covered by the ETS

19.3

Period start date

January 1, 2020

Period end date

December 31, 2020

Allowances allocated

955,112

Allowances purchased

28,500

Verified Scope 1 emissions in metric tons CO2e

242,742

Verified Scope 2 emissions in metric tons CO2e

632,762

Details of ownership

Facilities we own and operate

Comment

Note that in addition to Scope 1 and Scope 2, emission from waste disposal (65,403 metric tons CO2e in 2020) that belong to Scope 3 are covered by the ETS.

Switzerland ETS

% of Scope 1 emissions covered by the ETS

0.2

% of Scope 2 emissions covered by the ETS
0

Period start date
January 1, 2020

Period end date
December 31, 2020

Allowances allocated
29,216

Allowances purchased
2,905

Verified Scope 1 emissions in metric tons CO2e
35,552

Verified Scope 2 emissions in metric tons CO2e
0

Details of ownership
Facilities we own and operate

Comment

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 1, 2020

Period end date
December 31, 2020

% of total Scope 1 emissions covered by tax
0.01

Total cost of tax paid
50,000

Comment

Switzerland carbon tax

Period start date

January 1, 2020

Period end date

December 31, 2020

% of total Scope 1 emissions covered by tax

0.1

Total cost of tax paid

25,000

Comment

C11.1d

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

Our strategic approach to comply with the mentioned schemes consists of several components:

- We strive to constantly reduce our GHG emissions in the most cost-efficient way in order to avoid exceeding the allocated allowances and having to purchase allowances. The realization of CDM projects and the trading of emission allowances are used as additional measures to reduce our exposure.

- We continuously monitor the status of our relevant GHG emissions in relation to the compliance status and factor the costs of exceeding the allocated allowances into our financial planning process.

- We assess the further development of the cap and trade schemes and resulting potential financial risk for BASF via our Enterprise Risk Management.

Case Study (STAR-Approach): Situation: BASF-internal analyses of changes in the regulations underpinning the EU ETS and behavior of ETS market participants point to increasing ETS certificate prices (e.g. due to tightening of EU climate targets) over the fourth trading period. Task: Ensure continuous compliance with the requirements of the ETS and reduce cost burden. Action: Investigate and implement efficiency measures in our operations that lead to GHG emissions reductions and thus lower ETS costs. For example, we improved the heat integration at an adipic acid plant by use of an internal reflux on a more energetic efficient temperature level instead of using external water as reflux in heat integration columns. This led to a significant amount of steam savings with a corresponding saving of more than 5,600 metric ton CO2 emissions per year. Result: The efficiency measures help to reduce the cost burden from the ETS. For example, based on an average certificate price of €25 per ton CO2 in 2020, the measure in the adipic acid plant equals to a financial saving of €140,000 (other ETS factors like free allocation of certificates not taken into account). This also gives us an indication of

efficiency improvements achievable at other locations to mitigate compliance costs, should they become subject to a cap and trade scheme.

C11.2

(C11.2) Has your organization originated or purchased any project-based carbon credits within the reporting period?

Yes

C11.2a

(C11.2a) Provide details of the project-based carbon credits originated or purchased by your organization in the reporting period.

Credit origination or credit purchase

Credit purchase

Project type

Wind

Project identification

CN5173

Yichun Xinqing Laobaishan Windpark First Stage 30MW Wind Power Project

Verified to which standard

CDM (Clean Development Mechanism)

Number of credits (metric tonnes CO2e)

795

Number of credits (metric tonnes CO2e): Risk adjusted volume

795

Credits cancelled

Yes

Purpose, e.g. compliance

Compliance

Credit origination or credit purchase

Credit purchase

Project type

Wind

Project identification

CN5289
Xinjiang Jimunai CGN Phase I Wind Farm Project

Verified to which standard
CDM (Clean Development Mechanism)

Number of credits (metric tonnes CO2e)
22,161

Number of credits (metric tonnes CO2e): Risk adjusted volume
22,161

Credits cancelled
Yes

Purpose, e.g. compliance
Compliance

Credit origination or credit purchase
Credit purchase

Project type
Hydro

Project identification
KH8761
Stung Tatay Hydroelectric Project

Verified to which standard
CDM (Clean Development Mechanism)

Number of credits (metric tonnes CO2e)
287,044

Number of credits (metric tonnes CO2e): Risk adjusted volume
287,044

Credits cancelled
Yes

Purpose, e.g. compliance
Compliance

Credit origination or credit purchase
Credit purchase

Project type
Hydro

Project identification
UG4217
Bujagali Hydropower Project

Verified to which standard
CDM (Clean Development Mechanism)

Number of credits (metric tonnes CO2e)
2,343

Number of credits (metric tonnes CO2e): Risk adjusted volume
2,343

Credits cancelled
Yes

Purpose, e.g. compliance
Compliance

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.

Objective for implementing an internal carbon price
Stress test investments

GHG Scope
Scope 1
Scope 2

Application
Investment projects (capital expenditure, acquisitions)

Actual price(s) used (Currency /metric ton)

Variance of price(s) used
Differentiated, evolutionary pricing driven by the specific assessment, e.g. geography and timeframe of an investment.

Type of internal carbon price

Shadow price

Impact & implication

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.

Objective for implementing an internal carbon price

Navigate GHG regulations

GHG Scope

Scope 1
Scope 2

Application

Production facilities

Actual price(s) used (Currency /metric ton)

Variance of price(s) used

Differentiated, evolutionary pricing driven by geography and timeframe of the analysis.

Type of internal carbon price

Shadow price

Impact & implication

Carbon pricing plays a role in internal assessments of operational costs of our production facilities, the rationale being that costs originating from respective pricing schemes have an impact on the cost-benefit ratio of operations. The focus is on emissions from our own sites (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 case-by-case. The price of carbon considered depends on geography and timeframe of the analysis. Sometimes, several pricing scenarios are used to evaluate uncertainties in future regulatory environments. 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 latest regulatory trends.

Objective for implementing an internal carbon price

Other, please specify

Value-to-society assessment

GHG Scope

Scope 1

Scope 2

Scope 3

Application

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

Actual price(s) used (Currency /metric ton)

70

Variance of price(s) used

Evolutionary pricing using a base value for 2015 (70 EUR) and assuming an increase of 3% per year.

Type of internal carbon price

Shadow price

Impact & implication

The monetary valuation of GHG emissions through carbon pricing is one component of BASF's Value-to-Society approach, a new method developed by BASF with external experts to perform the first monetary assessment of the economic, ecological, and social impacts of its business activities along the value chain. The purpose of BASF's Value-to-Society approach is to assess our 'real' contribution to a sustainable future as comprehensively as possible. We quantify and value the financial and non-financial external effects of our business activities in society in a common unit – in Euro. The results reflect our 'real' value contribution, our benefits and costs to society. 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. The carbon price within Value-to-Society has been derived based on a meta-analysis of recent social cost of carbon estimates. The costs of GHG emissions to society through climate change are independent of the location of the source of the emission, therefore a single social cost of carbon is applied for all locations globally. The climate impact of an additional tons of CO2e is expected to rise over time. Therefore, it is assumed that the real social cost of carbon increases every year by 3%, as recommended by the IPCC. Value-to-Society 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
Yes, other partners in the value chain

C12.1a

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

Type of engagement

Information collection (understanding supplier behavior)

Details of engagement

Collect climate change and carbon information at least annually from suppliers

% of suppliers by number

8

% total procurement spend (direct and indirect)

47

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

Rationale for the coverage of your engagement

BASF is a founding member of Together for Sustainability (TfS), established in 2011 to improve sustainability in the supply chain. Suppliers are evaluated by independent experts either through on-site audits or online assessments. The evaluation results are made available to all TfS members in a database and are mutually recognized. Online assessments are conducted by EcoVadis, a ratings agency specialized in sustainability analyses and provide us with valuable information on our suppliers' sustainability performance, including GHG emissions, energy and emission reduction projects and relevant international certifications. A total of 4,675 online assessments were performed

in 2020 by the members of the initiative. BASF itself is assessed and was one of the best-rated companies in 2020 (among top 1% worldwide). In 2020, TfS kicked off the work stream “GHG scope 3 emissions”. Its objective is to develop feasible approaches to measure GHG emissions data as well as to obtain them from suppliers and share them across TfS members.
Rationale for coverage: Since our supplier base currently comprises more than 70,000 tier 1 suppliers (raw materials, chemicals, investment goods and consumables, range of services), we focus our third-party evaluations on the most relevant. We define relevant suppliers as Tier 1 suppliers showing an elevated sustainability risk potential. They are identified by applying our risk matrices (including country and industry-specific risks) and our purchasers’ assessments with focus on responsible supply of goods and services as well as environmental and social standards. We use further sources of information to identify relevant suppliers, such as evaluations from TfS. By 2025, we aim to have conducted sustainability evaluations for 90% of the BASF’s Group relevant spend (=procurement spend with relevant suppliers). We will develop action plans together with our suppliers where improvement is necessary. Also, we are working toward having 80% of suppliers improve their sustainability performance upon re-evaluation by 2025. Global targets are embedded in personal goals of persons responsible for procurement. Out of the total amount of suppliers in our portfolio in 2020, 8% had a valid sustainability evaluation. This represents a coverage of 47% of the spend, out of the total spend we had with these suppliers in 2020.

Impact of engagement, including measures of success

The scores in our EcoVadis online assessments provide a direct supplier performance indicator. It can be positively influenced by reporting on energy use and greenhouse gas (GHG) emissions, on energy and emission reduction projects, and by indicating that the supplier reports to CDP or holds international certifications. This enables BASF to foster supplier awareness and to promote adequate emissions management. In 2020, 40% of assessed suppliers reported on energy use and GHG emissions and/or were CDP respondents. In addition, nearly 10% of suppliers already reported on scope 3 emissions and 10% were holding an ISO 50001 certification. Altogether, 68% of BASF’s suppliers improved their sustainability performance upon re-evaluation.
Examples of positive outcomes: (1) BASF has engaged with some suppliers that produce caustic soda manufactured using renewable energy sources. This caustic soda has a significantly lower carbon footprint than the one conventionally produced. These suppliers currently claim that, according to the ISO 14067 calculation methodology, the footprint reduction could reach around 30%. (2) In South America, the decorative paint segment receives some raw materials packaged in metallic gallons. For years, the gallons were delivered by BASF´s suppliers without using the total load capacity of their trucks due to a height restriction of the site for incoming material. A local project completed beginning of 2020 enabled reducing the number of truck deliveries needed by increasing the number of layers in each load. This has led to a reduction of approximately 250 deliveries per year (resulting in a reduction of more than 13 tons of CO2 per year) for the same number of metallic gallons.
Measure of success: We measure the success by a) the share of relevant spend we cover with evaluations (status 2020: 80%), and b) the percentage of evaluated suppliers that improve their sustainability performance upon re-evaluation (status 2020: 68%).

These indicators are part of the company targets. In addition, climate change is an explicit component of BASF's sourcing strategies, because of its potential to drive sustainability: 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

Education/information sharing

Details of engagement

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: We integrate sustainability-related information on BASF and its products, including climate-related information, in day-to-day business with our customers by actively promoting such information as well as responding to respective customer requests. In line with our strategic principle "We innovate to make our customers more successful", we engage with customers in close partnerships to align our business optimally with our customers' needs and contribute to their success with innovative and sustainable solutions. We maintain a wide range of sustainability tools to support the interaction with our customers. This includes standard Product Carbon Footprint (PCF) assessments as well as more comprehensive lifecycle assessments like Eco-Efficiency Analysis, SEEBALANCE® and AgBalanceTM. In 2019 we initiated a project to make the individual cradle-to-gate PCFs for almost all of our 45,000 sales products available by the end of 2021 with the help of a new, in-house digital solution. The exact modus of interaction (e.g. one-to-one meetings, workshops, joint projects, seminars) and intensity of exchange is customer-dependent. For example, in 2020 a customer requested PCF information via email and bilateral exchange to assess opportunities for BASF products to contribute to the customer's climate protection targets. Part of our engagement also includes responding to customer information requests like the CDP Supply Chain Program (53 requests for this year's participation) or supplier performance reviews.

Rationale for coverage/size of engagement: Since customers are among our most important stakeholders our proactive information sharing and engagement essentially cover our entire customer base. Further, every customer could potentially require information on the PCF of the products they purchase from us, which supports the coverage of 100%.
Note regarding % Scope 3 emissions: Value of zero is given, because in line with current reporting standards BASF does not calculate and report GHG emissions from 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 to the customer by demonstrating credibility and know-how on climate-related topics as well as offering innovative solutions in this area. The buy-in of customers to BASF's solutions contributes to avoiding emissions along the value chain and e.g. also helps them pursuing and reaching their climate targets.
Measures of success: (1) We have segmented our portfolio regarding the contribution of our more than 45,000 products to sustainability (including reduction of GHG emissions and improving energy efficiency), using the externally validated Sustainable Solution Steering method. Products with a substantial sustainability contribution in the value chain are classified as Accelerators, and we measure the success of these Accelerators by their sales volume. We aim to achieve €22 billion in Accelerator sales by 2025 (2020: €16.7 billion). (2) The products that help to reduce GHG emissions or increase energy efficiency in this context are dubbed Accelerators "Climate Change and Energy" and reflect our wide portfolio of climate protection products. We also assess the contribution of these products to avoiding GHG emissions in dedicated case studies. For example, in 2020 we conducted an eco-efficiency analysis together with our customer Fuchs Petrolub of three mineral oil-based fluids from Fuchs. Lubricant additives, which are one example of BASF's Accelerator products, give hydraulic fluids long-term lubrication stability combined with wear and corrosion protection. They can be used to design high-quality products with a longer service life. In the analysis, we considered 8,000 hours of use in a crawler excavator and showed that over the entire life cycle, the high-performance hydraulic fluids have a much better carbon footprint than standard hydraulic fluids in this use case (reduction in GHG emissions corresponds to around 30 metric tons of CO2 equivalents). (3) Finally, we use feedback from our customers through the CDP Supply Chain Program and their supplier performance reviews to measure the impact of our activities.

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.

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 the largest integrated energy and chemicals clusters in Europe and the port management seeks for 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. Result: In 2020, the consortium was granted funding by the EU for the feasibility study. 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.

(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.

C12.3

(C12.3) Do you engage in activities that could either directly or indirectly influence public policy on climate-related issues through any of the following?

Direct engagement with policy makers
Trade associations
Funding research organizations
Other

C12.3a

(C12.3a) On what issues have you been engaging directly with policy makers?

Focus of legislation	Corporate position	Details of engagement	Proposed legislative solution
Cap and trade	Support with minor exceptions	Implementation of the EU emissions trading scheme (ETS) has been a focus of our lobbying activities in the EU. We promote	We support the ETS as an EU-wide harmonized and market-based instrument, but free allocation and/or financial

		the EU ETS as key element for the energy and industry sector in a new 2030 EU Energy and Climate framework. However, proper carbon leakage protection both for direct and indirect emissions has to be assured. Carbon Leakage protection from the ETS for new technologies can contribute to close the financial gap between existing and carbon free technologies. To that end, we analyzed data and shared the results of our analyses with the EU Commission and national authorities. We openly explain our positions at public meetings and discussions, in conversations with individual political decision makers and other stakeholders, in stakeholder consultations (e.g. the Public Consultation on State Aid/ EU ETS Indirect Cost Compensation), and on our website.	compensation to prevent carbon leakage beyond 2020 are an essential part to safeguard industrial competitiveness during the transition. In order to reduce GHG emissions, we will electrify our processes for the production of base chemicals using new technologies (e.g. e-cracker), tripling our renewable electricity needs. As a consequence, our cost base will shift from direct to indirect costs. Sectors with high electricity consumption therefore will need to be supported with indirect electricity price compensation to remain competitive. The EU guidelines on certain State Aid measures in the context of the EU ETS need to be amended to ensure indirect compensation applies to key sectors like petrochemicals.
Other, please specify Funding, Industry Support	Support	With our Carbon Management R&D Programme, we develop technologies and processes that are capable to substantially reduce GHG emissions. The competitiveness of such new technologies is closely linked to the political framework. The EU ETS with carbon leakage protection by free allocation and indirect cost compensation shall remain the central pillar of EU climate policy. But avoidance costs not covered by the ETS will become substantial in industrial production, as the ETS´s structure is moving away from an incentivizing cap and trade system. Therefore, alternative	We suggest Contracts for Difference on an EU level to incentivize the transition of hard-to-abate sectors like the chemical industry. This should supplement existing funding opportunities like the ETS innovation fund and the general framework set up by the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) for additional funding for the transition of the Energy Intensive Industry. However, an adequate financial volume will be needed. We do not consider that CBAMs are an appropriate measure, before holistic and globally accepted unanimous standards for

		instruments which look at carbon cost internalization should be explored as part of the policy toolbox. Support is necessary as long as there is no comparable carbon pricing globally. Together with other stakeholders, we looked at and evaluated different political instruments which may help to provide the investment security needed for industry to build pilot plants and further develop and implement new carbon free technologies. We contributed to stakeholder consultations (e.g carbon border adjustment mechanisms (CBAMs)) and discussed new ideas with think tanks, authorities and parties in Berlin and Brussels. Further, we gave input to respective studies and political papers, e.g. from Agora Energiewende, Stiftung 2°, DIW, GWD and ERCST.	carbon footprints are in place and can be handled with an acceptable amount of additional bureaucracy. With the restricted focus discussed today, CBAMs risk increasing basic material prices in the EU and thus put value chains at risk. The challenges related to maintaining the global economic order, protection of exports, administrative complexities and disruption to global free trade must be very carefully assessed. The practical implications designing CBAMs without creating excessive administrative burdens and global countermeasures are unsurmountable We support development of new political instruments, like Contracts for Difference.
Other, please specify Development of hydrogen economy	Support	Hydrogen could emerge as a new energy vector, as indicated by broad application possibilities in all sectors, storage and transport capability, and various options for CO2-free production. This would present an opportunity to significantly reduce society's carbon footprint. BASF is both a large producer and consumer of hydrogen, an important raw material of the chemical industry. Around 250,000 tons of H2 are produced each year at our site in Ludwigshafen, Germany, for example. The current standard production method, steam reforming, is associated with high CO2 emissions (9-10 tons of CO2 per ton of H2), BASF	The European Union needs a Hydrogen Strategy, which creates legal and investment certainty, to pave the way for a successful deployment of climate-friendly hydrogen. Since hydrogen cannot be substituted, industrial manufacturers, who are the key consumers of hydrogen, should be prioritized over other sectors like energy and heating. Both import from other regions as well as own production of H2 need to be advanced to present a cost-competitive option. Several types of incentives could be envisaged to support alternative ways of producing (see proposals under industry support/funding). Strong research and innovation support is needed to encourage progress on

		therefore plans to implement technologies like electrolysis and methane pyrolysis. In order to bring a successful hydrogen economy to life and reduce CO2 emissions efficiently, BASF is engaging in various initiatives such as the EU Clean Hydrogen Alliance, GET H2 and the initiative Collaborative Innovation for Low-Carbon Emitting Technologies (LCET). We shared our knowledge on hydrogen in conferences, for studies (e.g. IEA Hydrogen report), public hearings (e.g. Landtag Rheinland-Pfalz) and stakeholder consultations.	technologies which are still at low Technology Readiness Levels (TRLs) and improve or upscale existing technologies by increasing their performance and lowering their costs. A technology-neutral approach needs to be taken, based on a solid and credible certification framework, including clear and comprehensive definitions for different types of hydrogen that can contribute to the greenhouse gas abatement objective. Infrastructure should be carefully planned to safeguard gas quality requirements, allow safe and efficient transport and build on the potential of hydrogen as a storage solution. In Germany and at EU level, for example, it is important to quickly develop a separate hydrogen infrastructure by rededicating and constructing pipelines. Climate-friendly chemistry based on clean hydrogen will require large amounts of reliable renewable energy at competitive prices. The success of the hydrogen economy is inextricably linked to the expansion and integration of renewable energy as well as the removal of state-imposed components from electricity prices. In Germany, reform of the levy and surcharge system of the Renewable Energy Sources Act (EEG) is essential.

C12.3b

(C12.3b) Are you on the board of any trade associations or do you provide funding beyond membership?

Yes

C12.3c

(C12.3c) Enter the details of those trade associations that are likely to take a position on climate change legislation.

Trade association

ICCA (International council of chemical associations)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

Raise awareness for the specific ways in which the chemical industry can support GHG emissions mitigation and adaptation to climate change and to advocate for realization of a business environment in which the chemical industry can realize this potential best.

How have you influenced, or are you attempting to influence their position?

i. Support new studies on energy savings by products of the chemical industry and promotion of relevant ICCA studies, to which BASF contributed
ii. Support of ICCA positioning and communication, e.g. a policy paper supporting effective climate policies
iii. Contribution to guidelines and best-practice examples: Life-cycle analysis, carbon accounting and reporting

Trade association

Cefic (European chemical industry council)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

Raise awareness for the specific ways in which the chemical industry can support GHG emissions mitigation and adaptation to climate change and to advocate for realization of a business environment in which the chemical industry can realize this potential best.

How have you influenced, or are you attempting to influence their position?

Membership and active input in relevant working groups/board

Trade association

ACC (American chemistry council)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

Raise awareness for the specific ways in which the chemical industry can support GHG emissions mitigation and adaptation to climate change, contribute to energy efficiency and to advocate for realization of a business environment in which the chemical industry can realize this potential best.

How have you influenced, or are you attempting to influence their position?

Membership and input in relevant working groups

Trade association

ERT (European Round Table of Industrialists)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

Raise awareness for ways in which European industry in general can support GHG emission mitigation and to advocate for framework conditions in Europe that allow industry to mitigate in the most cost-efficient way.

How have you influenced, or are you attempting to influence their position?

Membership and input in relevant working groups

Trade association

VCI (Verband der chemischen Industrie, German chemical industry association)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

Raise awareness for the specific ways in which the chemical industry can support GHG emissions mitigation and adaptation to climate change and to advocate for realization of a business environment in which the chemical industry can realize this potential best.

How have you influenced, or are you attempting to influence their position?

i. Membership and input in relevant working groups/board
ii. Active participation in the VCI stakeholder dialogue on decarbonization and the Chemistry4Climate platform
iii. Active contribution to the VCI Study Roadmap 2050

Trade association

WBCSD (World business council for sustainable development)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

Advocate for realization of a business environment in which business can support GHG emissions mitigation and adaptation to climate change e.g. through fostering of carbon accounting and through the introduction of global carbon pricing mechanisms.

How have you influenced, or are you attempting to influence their position?

i. Membership and input in relevant working groups
ii. Support promotion of relevant WBCSD documents

Trade association

BE (Business Europe) and BDI (Federation of German Industries)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

Advocate for realization of a business environment in which industry can support GHG emissions mitigation and adaptation to climate change through its various technological solutions.

How have you influenced, or are you attempting to influence their position?

i. Membership and input in relevant working groups
ii. Contribution to BDI Klimapfade (Climate Path) study
iii. Preparatory work for an updated Climate Path study

Trade association

ABIQUIM (Associação Brasileira da Indústria Química)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

ABIQUIM supports the Paris Agreement. The chemical industry is a partner in the transition to a low-carbon economy, so that the current rhythm of production and consumption does not compromise the preservation of the environment and the maintenance of the quality of life for future generations.

How have you influenced, or are you attempting to influence their position?

Membership and input in relevant working groups

Trade association

NAM (National Association of Manufacturers)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

NAM believes the federal government has a clear role in setting climate policy. This begins by reengaging on the international stage to achieve a binding, fair global climate treaty. The goal of such an agreement must be to address the climate threat in a manner that prevents carbon leakage by ensuring that no country gains a competitive advantage by failing to take action to reduce carbon emissions.

How have you influenced, or are you attempting to influence their position?

Membership and input in relevant working groups

Trade association

European Union Chamber of Commerce in China

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

The European Chamber supports China to achieve the energy transition and meet the objectives set out in the 2015 Paris Climate Conference of the Parties (COP21) and reiterated in COP24 (Katowice).

How have you influenced, or are you attempting to influence their position?

Input in relevant working groups; BASF presidency

C12.3d

(C12.3d) Do you publicly disclose a list of all research organizations that you fund?

No

C12.3e

(C12.3e) Provide details of the other engagement activities that you undertake.

Our other engagement activities cover various areas.

1. Engagement in working groups, for example:

- Business 20 (active contribution to recommendations on energy, climate and resource efficiency for state and government leaders)
- Member of the Alliance of CEO Climate Leaders (encourage companies to step up their commitment to meeting the targets of the Paris climate accord; co-signatory of an open letter calling for a pledge to increase efforts to reduce emissions, improved analysis and reporting of climate-related financial risks as well as a global carbon pricing mechanism)
- Member of the EU Clean Hydrogen Alliance
- Member of the initiative "Collaborative Innovation for Low-Carbon Emitting Technologies in the Chemical Industry (LCET)", which runs within the frame of the Mission Possible Platform (convened by the World Economic Forum in partnership with the Energy Transitions

Commission) launched in 2019. BASF hosted the kick-off workshop of the LCET in July 2019 in Ludwigshafen.
- Chair of ISO committee that handles holistic environmental management issues (ISO 14000 series)
- Member of the econsense (Forum for Sustainable Development of German Business) project group "Environmental and Climate Issues"
- Participation in VCI stakeholder dialogue “Decarbonisation” and preparation of the new VCI/VDI Platform Cemistry4Climate
- Member of the economic council of the Green Party Germany as well as the economic councils of the German social democratic party and the christdemocratic party.
- Member of the If.E - Innovationsforum Energiewende
- Member of the TCFD Advisory Group on Scenario Analysis

2. Contribution to consultations and external studies, for example:

- Response to the EU Commission Consultations on
  - EU 2030 Climate Target Plan Inception Roadmap,
  - Inception Impact Assessment on Carbon border adjustment mechanism (CBAM)
  - the EU Strategy for Smart Sector Integration and Hydrogen
  - State Aid Guidelines
- ETS Innovation Fund: support of setting up the fund by a dedicated BASF expert
- Promotion of Contracts for Difference in several expert meetings
- Collaboration, interviews and data sharing with scientific and political organizations about future options for GHG reduction in the chemical industry (e.g. IEA, Fraunhofer, DECHEMA, DIW, Grüner Wirtschaftsdialog, Agora, Stiftung 2°, ERCST)

3. Publications, conferences, and other public relations work, for example:

- Information on technological successes of our Carbon Management by several press releases, interviews, articles and continuous update of our internet pages
- BASF Research Press Conference on Circular Economy
- BASF Capital Market Day (highlighting our new climate targets)
- Participation in WEF Event “Low-Carbon Emitting Technologies (Jan 2020)
- Participation and presentations at conferences (e.g. Chemie Hoch 3 Webinar (April 2020): Green Deal der EU-Kommission: Auf dem Weg zur Klimaneutralität; VDI Expertenforum (Oct. 2020), 1. Lausitzer Fachkonferenz „Klimaneutrale Industrie“ (Nov. 2020))
- Public support for the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD)
- Information materials and newsletters for politicians, journalists and public (e.g. sustainability news)
- Showcasing of climate protection products in exhibition in BASF's visitor center in Ludwigshafen

C12.3f

(C12.3f) What processes do you have in place to ensure that all of your direct and indirect activities that influence policy are consistent with your overall climate change strategy?

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 head of the Corporate Development unit reports to the Board of Directors and has 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 [1]. 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 in the internet [2]. 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.

Citations:
[1] Policy on Government Relations and Advocacy: https://www.basf.com/global/en/who-we-are/sustainability/management-goals-and-dialog/stakeholder-dialog/politicalcommunication-and-advocacy.html
[2] Industry Associations Review: https://www.basf.com/global/en/who-we-are/sustainability/we-produce-safely-and-efficiently/energy-and-climate-protection/energy-andclimate-policies.html

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

BASF_Report_2020.pdf

Page/Section reference

p. 26-29 (“Our Strategy”); p. 42-48 (“Integration of Sustainability"); p. 113-115 (“Supplier Management”); p. 130-134 (“Energy and climate protection”); p. 135-136 ("Climate protection with carbon management"); p. 158-166 (“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

Frontpage_Energy and Climate Protection.pdf

Page/Section reference

Entire document

Content elements

Governance
Strategy
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

C15. 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.

C15.1

(C15.1) 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