

Module: Introduction**Page: Introduction****CC0.1****Introduction**

Please give a general description and introduction to your organization.

At BASF, we create chemistry for a sustainable future. As the world's leading chemical company, we combine economic success with environmental protection and social responsibility. The approximately 112,000 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.

Our portfolio is arranged into five segments: Chemicals, Performance Products, Functional Materials & Solutions, Agricultural Solutions and Oil & Gas. In 2015, BASF posted sales of €70.4 billion and income from operations before special items of approximately €6.2 billion. BASF shares are traded on the stock exchanges in Frankfurt (BAS), London (BFA) and Zurich (AN). Further information on BASF is available on the internet at www.basf.com.

With the "We create chemistry" strategy, BASF has set itself ambitious goals in order to strengthen its position as the world's leading chemical company. We want to contribute to a sustainable future and have embedded this into our corporate purpose: "We create chemistry for a sustainable future." We live our corporate purpose by sourcing and producing responsibly, acting as a fair and reliable partner, and connecting creative minds to find the best solutions for market needs. For us, this is what successful business is all about.

Dealing with climate change is one of the major challenges to ensure a sustainable future. That's why we are committed to global climate protection. Our climate-related activities build on the following key elements:

- i) We are constantly working to reduce greenhouse gas emissions in our production. By 2020, we aim to reduce our greenhouse gas emissions per metric ton of sales product by 40% compared with baseline 2002. We already achieved a reduction of 34.6% in 2015. Overall since 1990, we have been able to lower BASF's greenhouse gas emissions from chemical operations by 50% and reduce specific emissions by 74%.
- ii) We help our customers to reduce their carbon footprints by offering innovative products for climate protection. The climate protection products sold in 2015 to nearly all industrial sectors are part of technologies, which avoid 530 million tons of CO₂e emissions. We invest about half of our annual R&D expenditures (€1.953 billion total R&D expenses in 2015) on product and process innovations where the R&D target is related to energy/resource efficiency and climate protection.
- iii) We are the only industrial company worldwide to regularly present a comprehensive and quantitative corporate carbon footprint since 2008. We report our emissions along the value-adding chain according to the Greenhouse Gas Protocol Standards. Moreover, we calculate how our climate protection products reduce the CO₂e emissions of our customers, using our accredited BASF Eco-Efficiency Analysis method and taking into account the guideline for assessment of avoided

emissions developed by the International Council of Chemical Associations (ICCA) and the World Business Council for Sustainable Development (WBCSD). Our corporate carbon footprint is the quantitative basis for strategic reviews and for setting appropriate goals.

iv) We closely follow the climate change science and evaluate the risks that climate change poses to our sites and to our partners. Where necessary we take preventive measures.

v) We pro-actively engage with our various stakeholders on climate change issues and contribute our expertise. For example, in 2015 we participated in different working groups of the ICCA and the WBCSD dealing with climate change topics.

vi) We appointed a Climate Protection Officer to coordinate the company's worldwide climate-related activities. He reports directly to the Board of Executive Directors.

Forward-Looking Statements:

This document may contain forward-looking statements that are subject to risks and uncertainties, including those pertaining to the anticipated benefits to be realized from the proposals described herein. Forward-looking statements may include, in particular, statements about future events, future financial performance, plans, strategies, expectations, prospects, competitive environment, regulation and supply and demand. BASF has based these forward-looking statements on its views and assumptions with respect to future events and financial performance. Actual financial performance could differ materially from that projected in the forward-looking statements due to the inherent uncertainty of estimates, forecasts and projections, and financial performance may be better or worse than anticipated. Given these uncertainties, readers should not put undue reliance on any forward-looking statements. The information contained in this document is subject to change without notice and BASF does not undertake any duty to update the forward-looking statements, and the estimates and assumptions associated with them, except to the extent required by applicable laws and regulations.

CC0.2

Reporting Year

Please state the start and end date of the year for which you are reporting data.

The current reporting year is the latest/most recent 12-month period for which data is reported. Enter the dates of this year first.

We request data for more than one reporting period for some emission accounting questions. Please provide data for the three years prior to the current reporting year if you have not provided this information before, or if this is the first time you have answered a CDP information request. (This does not apply if you have been offered and selected the option of answering the shorter questionnaire). If you are going to provide additional years of data, please give the dates of those reporting periods here. Work backwards from the most recent reporting year.

Please enter dates in following format: day(DD)/month(MM)/year(YYYY) (i.e. 31/01/2001).

Enter Periods that will be disclosed

Thu 01 Jan 2015 - Thu 31 Dec 2015

CC0.3**Country list configuration**

Please select the countries for which you will be supplying data. If you are responding to the Electric Utilities module, this selection will be carried forward to assist you in completing your response.

Select country

CC0.4**Currency selection**

Please select the currency in which you would like to submit your response. All financial information contained in the response should be in this currency.

EUR(€)

CC0.6**Modules**

As part of the request for information on behalf of investors, electric utilities, companies with electric utility activities or assets, companies in the automobile or auto component manufacture sub-industries, companies in the oil and gas sub-industries, companies in the information technology and telecommunications sectors and companies in the food, beverage and tobacco industry group should complete supplementary questions in addition to the main questionnaire.

If you are in these sector groupings (according to the Global Industry Classification Standard (GICS)), the corresponding sector modules will not appear below but will automatically appear in the navigation bar when you save this page. If you want to query your classification, please email respond@cdp.net.

If you have not been presented with a sector module that you consider would be appropriate for your company to answer, please select the module below. If you wish to view the questions first, please see <https://www.cdp.net/en-US/Programmes/Pages/More-questionnaires.aspx>.

Further Information

Module: Management

Page: CC1. Governance

CC1.1

Where is the highest level of direct responsibility for climate change within your organization?

Board or individual/sub-set of the Board or other committee appointed by the Board

CC1.1a

Please identify the position of the individual or name of the committee with this responsibility

- i) Ms. Margret Suckale, Board member and Industrial Relations Director, responsible for Environment, Health and Safety, has the overall responsibility for climate protection. She chairs BASF's Corporate Sustainability Board (CSB), which is BASF's central steering committee for sustainable development, including climate protection. It is comprised of the 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.
- ii) Dr. Beate Ehle, President of the Competence Center Environment, Health and Safety, is BASF's Climate Protection Officer. She reports directly to Ms. Margret Suckale and is a member of the CSB. The Competence Center integrates major global functionalities required for preparing decisions of the CSB on climate protection, such as corporate environmental goal setting, controlling and reporting, energy efficiency activities and climate change monitoring.
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CC1.2

Do you provide incentives for the management of climate change issues, including the attainment of targets?

Yes

CC1.2a

Please provide further details on the incentives provided for the management of climate change issues

Who is entitled to benefit from these incentives?	The type of incentives	Incentivized performance indicator	Comment
Director on board	Monetary reward	Emissions reduction target Efficiency target	
Corporate executive team	Monetary reward	Emissions reduction target Efficiency target	
Executive officer	Monetary reward	Emissions reduction project Energy reduction project Efficiency project Other: Further individual operative / strategic targets concerning climate-related activities, e.g. sales of climate protection products	
Environment/Sustainability managers	Monetary reward	Other: Individual targets concerning climate-related projects or activities	
Process operation managers	Monetary reward	Emissions reduction project Energy reduction project Efficiency project	
Other: Marketing manager/account executive	Monetary reward	Other: Individual targets on sales of climate protection products	
Other: Project leaders R&D	Monetary reward	Other: Individual targets on the development of new products for climate protection and adaptation to climate change	
All employees	Monetary reward	Other: 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 2015 result in an annual greenhouse gas emission reduction of about 25,800 metric tons of CO2e.	

Further Information

Page: CC2. Strategy

CC2.1

Please select the option that best describes your risk management procedures with regard to climate change risks and opportunities

Integrated into multi-disciplinary company wide risk management processes

CC2.1a

Please provide further details on your risk management procedures with regard to climate change risks and opportunities

Frequency of monitoring	To whom are results reported?	Geographical areas considered	How far into the future are risks considered?	Comment
Annually	Board or individual/sub-set of the Board or committee appointed by the Board	Global: BASF's multinational operations require to consider climate change basically across the whole world. This coverage is facilitated via 61 global and regional business units, as well as central divisions and competence centers, interlinked in a matrix-type structural setup.	> 6 years	As part of its enterprise risk management (ERM), BASF has established a specific company-wide process to effectively identify, assess, and manage risks and opportunities associated with climate change. Accountability for the ERM process with regard to climate change lies with the Climate Protection Officer (CPO), heading the BASF Management Team for Climate Protection with experts world-wide from the following BASF groups: Environment, Health and Safety (EHS), Sustainability Strategy, Communication & Governmental Relations, and Investor Relations. The frequency of monitoring depends on the type of risk/opportunity, but occurs at least once per year. Based on the assessment, the CPO delivers an overall yearly status report to the top management. If a risk is identified

Frequency of monitoring	To whom are results reported?	Geographical areas considered	How far into the future are risks considered?	Comment
				that could have an impact on earnings of more than €10 million, it must be immediately reported to the Board of Executive Directors.

CC2.1b

Please describe how your risk and opportunity identification processes are applied at both company and asset level

BASF's risk management process applies to the company as well as to assets. The BASF Management Team for Climate Protection ("MTCP") meets quarterly with several sub-teams to evaluate specific risks and opportunities, which can be categorised into four types: regulatory, climate change, reputational, market development.

Regulatory/carbon-market: A team of experts from business units (BUs) and central functions analyses emission certificate costs for all BASF plants included in the EU ETS. As these costs pose a significant risk to BASF, an annual report is prepared for the Board of Executive Directors. A similar process is in place worldwide for locations with significant BASF production sites to evaluate the impact of existing/planned carbon regulations. The assessment of plants indicates an asset level evaluation, which is then being aggregated up to company level.

Climate/weather change: The BASF Climate Monitoring Expert Group continuously evaluates the physical risks from climate change in Europe, Asia, North America and South America to assess the potential effect on our sites (i.e. asset level, aggregated up to company level). The results are reported regularly to the MTCP.

Reputation including investor relations: The BASF Corporate Sustainability Communication and the Governmental Relations department hold open dialogues on climate change issues with stakeholders. The Investor Relations team also engages in regular dialogue with investors and analysts worldwide. The results are reported regularly to the MTCP and can cover company and asset level.

Market development: The MTCP meets regularly with the BASF subsidiary scouting for new business areas to assess opportunities for new climate protection products, and a team of BU representatives regularly evaluates customer expectations regarding the carbon performance of our products. This process part is considered to apply primarily at company level due to the need to fit with the BASF strategy.

CC2.1c

How do you prioritize the risks and opportunities identified?

Risks and opportunities are evaluated based on three major aspects:

- their potential financial implications for BASF,
- the ability to threaten BASF's license to operate,

- the probability of occurrence.

We have defined the magnitude of impact to be linked to the following net financial implications for BASF's EBIT: High > €100 million, Medium-high = €10-100 million, Medium = €2-10 million, Low-medium < €2 million and Low = insignificant. A specific risk or opportunity is considered material, if the resulting deviation from planned earnings exceeds €2 million. If a risk is identified that could have an impact on earnings of more than €10 million, it must be immediately reported to the Board of Executive Directors.

CC2.1d

Please explain why you do not have a process in place for assessing and managing risks and opportunities from climate change, and whether you plan to introduce such a process in future

Main reason for not having a process	Do you plan to introduce a process?	Comment

CC2.2

Is climate change integrated into your business strategy?

Yes

CC2.2a

Please describe the process of how climate change is integrated into your business strategy and any outcomes of this process

At BASF, we want to contribute to a sustainable future and have embedded this into our corporate purpose: "We create chemistry for a sustainable future." Our sustainability management is assisted by constant exchange with our stakeholders as well as by our systematic materiality analysis. Climate change has been identified as one of the major sustainability challenges and how to deal with it is therefore a priority area within sustainability management.

i. Internal climate change-related processes that influence the strategy

In 2008, BASF created the position of the Climate Protection Officer. The CPO together with the Management Team for Climate Protection are the central units responsible for the integration of climate change-related aspects into the strategy of business units (BUs) and into the corporate strategy. The integration of business unit-specific climate change aspects into strategy updates are discussed in annual meetings among the CPO, his team, and the top management of the individual BUs. Long-term market opportunities are analyzed in detail in specific projects that are initiated by the CPO and his team.

Moreover, the CPO and his team link climate change to BASF's overall sustainability management. We have created structures to promote sustainable, entrepreneurial actions all the way from strategy to implementation. The CPO is member of the Corporate Sustainability Board, BASF's central steering committee for sustainable development that is chaired by a member of the Board.

The review process of the implementation of strategic measures is conducted annually by the Board as part of the company's internal reporting system in conjunction with the publication of BASF's Corporate Report.

Beyond that, the upper management, including members of the Board, is informed about climate-relevant issues on demand. We continuously analyze the external findings and review our strategy against them. In 2015, COP 21 in Paris was in the focus of such updates. For example, we assessed major INDCs, or investigated the activities on non-state actors.

ii. Aspects influencing the strategy

The identified regulatory, carbon market, physical, reputational, investor-related, market-development and customer-related risks and opportunities influence BASF's business strategy. The importance of the different aspects varies depending on the BU. The strategies of BUs that supply base chemicals are particularly influenced by carbon market regulations. Emission reduction targets set for the company result in long-term competitive advantages, but require short-term investments by these units. BUs providing climate protection solutions are more strongly influenced by market-development opportunities and thus focus on the further development and promotion of these products.

iii. Short-term strategy

BASF defines 'short-term' as less than two years.

Technological and operational excellence is a strategic focus area for BASF. Projects for increase of energy efficiency and reduction of raw material demand, which are closely linked to reduction of GHG emissions, contribute significantly to the continuous improvement of our operational excellence. The awareness for these projects and their relevance have clearly increased through consideration of the co-benefit for climate protection.

Our communication has also been influenced by climate change. For example, exchange on product carbon footprint data has become more relevant in customer relationships. We also consider new approaches for GHG accounting to maintain a state-of-the-art corporate carbon footprint published in our annual reporting. For example, in 2015 we have calculated for the first time our market-based Scope 2 emissions based on the respective new guideline from the GHG Protocol.

iv. Long-term strategy

BASF defines 'long-term' as 10 years and more.

Concerning the long-term strategy, business opportunities and risks from changing market demands are integrated in the R&D and product portfolio strategies of the BUs. We want to increase the share of our products that contribute particularly to sustainability in the value chain ("Accelerators"). Accelerators "Climate Change & Energy" reflect our wide portfolio of climate protection products helping to reduce GHG emissions or increase energy efficiency. A set of 25 climate protection product groups sold in 2015 helps our customers to avoid 530 million tons CO₂e. Our current research activities in areas such as renewable energy are expected to further increase our sales of these products.

Our long-term investment decisions are also influenced by climate change. We have integrated an impact assessment of potential GHG emissions from new/expanded plants in the wider decision-making process within the BASF committee in charge of investment project approvals. This assessment includes, for example, long-term expectations on carbon policies and carbon pricing, as well as the effect on our 2020 climate protection goal (-40% specific GHG emissions compared to 2002).

v. Strategic advantages

The early focus on energy efficiency and GHG emission reduction in our production plants has made BASF more resilient against production cost increase through carbon pricing. For example, as a result of the above-average efficiency, we expect the free allocation of certificates for our chemical plants in the third trading period to be nearly sufficient.

Integration of opportunities stemming from newly developing markets for climate protection products into the long-term business strategies enables BASF to build on various early mover advantages in these markets.

vi. Examples of business-decisions in 2015 influenced by climate change

We continued to foster energy efficiency and GHG emission reductions in our operations in line with our short-term strategy. For example, we extended the integrated steam network at our Ludwigshafen site and we started up a new combined heat and power plant at our Münster site. We also promoted electric mobility in our European fleet by replacing 100 cars with standard combustion engine by electric vehicles.

Several examples underpin how we support our long-term goal to increase the share of our “Accelerator” products: We supplied the first PolyTHF 1000 using renewable raw materials, and also our Synative ES TMP ester base stocks contain a large amount of renewable material. In the area of construction, we signed an agreement with Tianjin Eco-city to jointly develop the world’s tallest certified passive house. Finally, BASF turned 150 in 2015, and we celebrated this anniversary by bringing partners all over the globe together to co-create ideas for urban living, smart energy and food. Climate change as a material sustainability topic was a major driver in this approach called Creator Space. Employee awareness campaigns for energy efficiency in business as well as private life, e.g. the initiative “Your energy counts” at our Ludwigshafen site, accompanied the anniversary.

CC2.2b

Please explain why climate change is not integrated into your business strategy

CC2.2c

Does your company use an internal price of carbon?

Yes

CC2.2d

Please provide details and examples of how your company uses an internal price of 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 focus is on 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 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. The internal price is determined by global procurement under consideration of input from several internal stakeholders, e.g. technical and governmental affairs experts assessing latest regulatory trends.

CC2.3

Do you engage in activities that could either directly or indirectly influence public policy on climate change through any of the following? (tick all that apply)

Direct engagement with policy makers
Trade associations

CC2.3a

On what issues have you been engaging directly with policy makers?

Focus of legislation	Corporate Position	Details of engagement	Proposed legislative solution
Energy efficiency	Support with minor exceptions	<p>In the EU, our engagement has been focused on the revision of the EPBD (Energy Efficiency of Buildings Directive) and the EED (Energy Efficiency Directive). We openly explain our positions at public meetings, in associations and in discussions and in conversations with individual political decision makers and other stakeholders and give presentations at international conferences. We have participated in stakeholder consultations. We gave presentations on best practices for voluntary energy efficiency measures in industry, based on our own experiences. We have promoted building standards and financial support for energy-efficient, sustainable buildings in all world regions and strive to open up the EPBD for new technologies. We have engaged in sustainable buildings labels (LEED, DGNB, BREAM etc.) and participated in projects that demonstrate how low-energy houses are realistically achievable and cost-effective over time. We engage in green building councils and in projects with different players of the value chain (e.g., housing companies, construction companies, architects) to develop, demonstrate and educate about low energy building. We use these projects as demonstration towards public authorities. The US Energy Policy Modernization Act of 2016 enjoyed BASF support for key provisions on energy efficiency. In particular, the legislation would allow consumers to value efficiency features in mortgage underwriting, encourage the Department of Energy to advance efficiency through model building codes and accelerate the utilization of holistic efficiency measures in federal buildings.</p>	<p>We ask for conditions that promote real efficiency improvements. Limiting the absolute energy usage of the EU may set a limit to economic growth. This applies particularly to all countries with already high efficiency standards. As the demand for goods (incl. energy efficiency products) is worldwide continuously growing, a cap on the EU's energy consumption may limit the EU's share of this production growth and may export the economic growth to other regions of the world. We support voluntary measures from industry. We support the buildings part of the Energy Efficiency directive and the revision of the EPBD. Energy efficient renovations of buildings have repeatedly been shown to have, by far, the biggest cost-effective energy savings and emissions reduction potential of any sector in the EU. Long-term strategies for ambitious energy efficiency renovation of the building stock may best be incorporated through sectorial standards and by addressing market barriers. We support a holistic approach for buildings renovation. We advocate at national level for ambitious building renovations strategies, supported by adequate financing schemes. Similarly, standards for transport and other sectors, including standards for infrastructure e.g. for electro-mobility, may be appropriate.</p>

Focus of legislation	Corporate Position	Details of engagement	Proposed legislative solution
Clean energy generation	Support with major exceptions	<p>We provide information and openly explain our positions at public meetings and discussions, in conversations with individual political decision makers, and in various media. Concerning the German „energy turnaround“ we currently are in discussions with German government and the European Commission on the future treatment of on-site power supply generated in highly efficient combined heat and power plants (CHP) beyond 2017. We as well as the German government strive for a permanent non-burdening of these plants with renewable surcharges due to their positive contribution to energy efficiency and competitiveness of chemical production. Moreover, we have been engaged at If.E (Innovationsforum Energiewende - an initiative of the chemical trade union together with German industry) to strengthen innovation.</p>	<p>Refocus goals on the triple objective of cost-competitiveness, energy security and climate protection. Optimization of costs by i. Research to increase cost efficiency of technologies; ii. Better harmonization of EU targets, instruments and markets across the EU; iii. Better synchronization between development of energy production, grids, storage; iv. Technology-neutral approach to meet climate targets. BASF promotes fracking, as a substitution of coal by gas can significantly lower GHG emissions.</p>
Cap and trade	Support with major exceptions	<p>We promote the EU ETS as key element for the energy and industry sector in a new 2030 EU Energy and Climate framework. We are actively engaged in the further design and development of ETS approaches. We openly explain our positions at public meetings and discussions, in conversations with individual political decision makers and other stakeholders, and in stakeholder consultations. We exchanged knowledge with visitors from Korea and China in Europe and participated in a conference and bilateral meetings in Korea to inform about experiences with the European ETS and help to establish meaningful ETS systems globally. We advocate for global carbon pricing and a binding agreement with commitments from all countries based on their responsibilities and capabilities.</p>	<p>We support development of new ETS systems in other world regions and the linkage of the EU ETS system with other ETS systems. We support ETS as an EU-wide harmonized and market-based instrument, but free allocation and compensation to prevent carbon leakage beyond 2020 are an essential part to safeguard industrial competitiveness as long as no comparable global system exists. ETS revenues from industry should completely stay in the sector to finance industry research and efficiency projects instead of financing non-ETS sector improvements or any other unrelated government projects. We do not support changes to the EU ETS in the existing trading period, as the ETS reaches its goal (GHG reduction); but we support a better design of the ETS and a better harmonization between different energy and climate policies past 2020. EU climate goals must refocus on the triple objective of cost-competitiveness, energy security and climate protection. Key parameters for all objectives need to be defined and a monitoring process needs to be set up – to enable respective EU policies to be reviewed in case the EU is not on track towards these objectives.</p>

Are you on the Board of any trade associations or provide funding beyond membership?

Yes

CC2.3c

Please enter the details of those trade associations that are likely to take a position on climate change legislation

Trade association	Is your position on climate change consistent with theirs?	Please explain the trade association's position	How have you, or are you attempting to, influence the position?
ICCA (International council of chemical associations)	Consistent	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.	i. Support promotion of relevant ICCA studies (Buildings Roadmap, Catalysis Roadmap, Bio Roadmap), to which BASF contributed; ii. Support of ICCA positioning and communication at COP 21; iii. Contribution to guidelines and best-practice examples: Life-cycle analysis, carbon accounting and reporting
Cefic (European chemical industry council)	Consistent	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.	i. Membership and active input in relevant working groups/board; ii. Active contribution to increase know-how and initiatives to promote energy efficiency (www.spice3.eu); iii. Contribution to research on carbon capture and use
ACC (American chemistry council)	Consistent	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.	Membership and input in relevant working groups
ERT (European Round Table of Industrialists)	Consistent	Raise awareness for ways in which European industry in general can support GHG emission mitigation to climate change and to advocate for framework conditions in Europe that allow industry to mitigate in the most cost-efficient way.	Membership and input in relevant working groups
ASE (Alliance to Save Energy)	Consistent	ASE is focused on energy efficiency. ASE supports the creation of a domestic cap-and-trade program that sets a carbon price, implements complementary energy efficiency policies and invests in energy efficiency programs. Energy	i. Participation in policy meetings and discussions with ASE; ii. Membership in committees and working groups

Trade association	Is your position on climate change consistent with theirs?	Please explain the trade association's position	How have you, or are you attempting to, influence the position?
		efficiency is a necessary part of the solution to global climate change.	
VCI (Verband der chemischen Industrie, German chemical industry association)	Consistent	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.	Membership and input in relevant working groups/board
WBCSD (World business council for sustainable development)	Consistent	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.	i. Membership and input in relevant working groups; ii. Support promotion of relevant WBCSD documents, e.g. at the COP 21; iii. Contribution to guidelines and best-practice examples, e.g. life-cycle analysis
BE (Business Europe) and German BDI	Consistent	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.	Membership and input in relevant working groups
CBCSD (China Business Council for Sustainable Development)	Consistent	CBCSD provides inputs to the government and assists in policy development in order to create a framework that allows business to contribute effectively to sustainable development; they promote exchange and cooperation between Chinese and foreign enterprises to introduce and demonstrate latest progress in environmental and resource management and improve corporate social responsibility.	BASF is actively sharing ideas, experience and best practice on sustainable development to mobilize more Chinese enterprises to deal with the challenges on EHS, as well as climate change and globalization.
PUEurope	Mixed	Support of legislation and funding for energy efficiency of buildings (fully consistent) and sometimes for an energy cap (inconsistent)	i. Membership and input in relevant working groups/board; ii. We do not support an energy cap. As the demand for goods (incl. energy efficiency products) is worldwide continuously growing, a cap on the EU's energy consumption may limit the EU's share of this production growth and may export the economic growth to other regions of the world.

Do you publicly disclose a list of all the research organizations that you fund?

CC2.3e

Please provide details of the other engagement activities that you undertake

CC2.3f

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 Climate Protection Officer together with the Management Team for Climate Protection are the central units finally responsible for ensuring consistency of direct and indirect activities with the overall climate protection strategy. They govern the exchange of the various internal stakeholders and contributors on relevant topics in cross-regional and cross-sectoral teams, which are in regular contact via telephone conferences or face-to-face meetings. Issues are discussed and positions are agreed in these teams. The developed position papers are available in the Intranet to all employees. Communication is also facilitated by electronic tools like the internal social network and virtual teamrooms. The BASF Sustainability Board and the BASF Board are informed by the Climate Protection Officer about progress and future perspectives so that they can give guidance. Regarding major investment projects, the impact assessment of potential GHG emissions from new/expanded plants is integrated in the wider decision-making process within the BASF committee in charge of investment project approvals. Environment, health and safety evaluations by respective internal expert communities are fed into this process.

CC2.3g

Please explain why you do not engage with policy makers

Further Information

Page: CC3. Targets and Initiatives

CC3.1

Did you have an emissions reduction or renewable energy consumption or production target that was active (ongoing or reached completion) in the reporting year?

Intensity target

CC3.1a

Please provide details of your absolute target

ID	Scope	% of emissions in scope	% reduction from base year	Base year	Base year emissions covered by target (metric tonnes CO2e)	Target year	Is this a science-based target?	Comment
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CC3.1b

Please provide details of your intensity target

ID	Scope	% of emissions in scope	% reduction from base year	Metric	Base year	Normalized base year emissions covered by target	Target year	Is this a science-based target?	Comment
Int1	Scope 1+2 (location-based)	93%	40%	Metric tonnes CO2e per metric tonne of product	2002	0.897	2020	Yes	(i) The target applies to BASF's global business without our oil and gas activities that are bundled in the Wintershall Group. The target covers all GHG emissions from the six Kyoto gases CO2, N2O, CH4, HFCs, PFCs, and SF6. In 2013 NF3 has been added to the GHG Protocol standard. Our operations do not require or result in the generation of NF3, so that the

ID	Scope	% of emissions in scope	% reduction from base year	Metric	Base year	Normalized base year emissions covered by target	Target year	Is this a science-based target?	Comment
									target definition is unaffected by this amendment. +++ (ii) BASF has evaluated the target against the criteria in CDP's Technical Note on Science Based Targets and concluded that the target is science-based. See "Further information" in CC3 for additional details of the assessment.

CC3.1c

Please also indicate what change in absolute emissions this intensity target reflects

ID	Direction of change anticipated in absolute Scope 1+2 emissions at target completion?	% change anticipated in absolute Scope 1+2 emissions	Direction of change anticipated in absolute Scope 3 emissions at target completion?	% change anticipated in absolute Scope 3 emissions	Comment
Int1	Decrease	9.1			The provided estimate for BASF's future absolute GHG emissions applies to our global business without the Oil & Gas segment Wintershall. It is based on an assumed production volume growth of 4% per year for BASF, considering the volume of sales products in 2015 as starting point for the estimation.

CC3.1d

Please provide details of your renewable energy consumption and/or production target

ID	Energy types covered by target	Base year	Base year energy for energy type covered (MWh)	% renewable energy in base year	Target year	% renewable energy in target year	Comment
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CC3.1e

For all of your targets, please provide details on the progress made in the reporting year

ID	% complete (time)	% complete (emissions or renewable energy)	Comment
Int1	72%	86%	Because the target was set to steer our operational decisions, 2002 has been chosen as base year. The result of our very early efforts to reduce GHG emissions can be seen when taking 1990 as a base year: Despite a 96% increase in our production volumes since 1990, we have succeeded in reducing absolute greenhouse gas emissions by 50% and lower specific emissions by 74%.

CC3.1f

Please explain (i) why you do not have a target; and (ii) forecast how your emissions will change over the next five years

CC3.2

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

CC3.2a

Please 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	Description of product/Group of products	Are you reporting low carbon product/s or avoided emissions?	Taxonomy, project or methodology used to classify product/s as low carbon or to calculate avoided emissions	% revenue from low carbon product/s in the reporting year	% R&D in low carbon product/s in the reporting year	Comment
Company-wide	BASF conducts sustainability assessments and ratings for its portfolio of more than 60,000 specific product applications using the Sustainable Solution Steering® method. This externally validated procedure allows us to determine how our products contribute to sustainability, in which products with a substantial sustainability contribution in the value chain are classified as Accelerators. The products that help to reduce GHG emissions or increase energy efficiency in this context are dubbed Accelerators "Climate Change & Energy" and reflect our wide portfolio of climate protection products. As part of its corporate carbon footprint BASF regularly estimates the GHG emissions avoidance	Avoided emissions	Addressing the Avoided Emissions Challenge-Chemicals sector		More than 40% but less than or equal to 60%	The calculations of avoided GHG emissions are based on the chemical industry standard of the ICCA and the World Business Council for Sustainable Development (WBCSD) published in 2013. For the year 2015, we calculated that the use of BASF climate protection products that were sold in the reporting year enables customers to reduce their emissions from 1210 to 680 million metric tons of CO ₂ e, thus preventing 530 million metric tons of CO ₂ e emissions. The calculation of avoided GHG emissions is based on individual life cycle analyses (LCAs) that we conduct using BASF's proven Eco-Efficiency Analysis method. Hence, avoided emissions are

Level of aggregation	Description of product/Group of products	Are you reporting low carbon product/s or avoided emissions?	Taxonomy, project or methodology used to classify product/s as low carbon or to calculate avoided emissions	% revenue from low carbon product/s in the reporting year	% R&D in low carbon product/s in the reporting year	Comment
	<p>potential of a subset of these climate protection products. For the year 2015, we assessed the use of 25 selected climate protection product groups in the construction & residential, energy, transportation, industry and agriculture sectors that were sold in the reporting year to customers. Products groups that were taken into account comprise among others catalysts for the decomposition of nitrous oxide, products for the wind energy sector such as coatings or grouts, insulation materials, cement additives and fuel additives. One example of a specific climate protection product is BASF's Green Sense® Concrete Technology, an optimized mixture program in which recycled cementitious and non-cementitious materials are used in combination with specially formulated BASF admixtures. In comparison to regular concrete, the Green Sense Concrete technology lowers energy demands, GHG emissions and other environmental impacts. The result is an environmentally-friendly, cost-effective high performance concrete.</p>					<p>the difference between the life cycle greenhouse gas emissions from our solution and the solution it is compared to for achieving the same user benefit. Life cycle avoided emissions almost always arise from the efforts of multiple partners along the value chain. Attributing these avoided emissions to individual partners or products is challenging due to a variety of reasons. Nevertheless, we have assessed the individual contribution of our climate protection products to their respective value chain using an economic allocation approach and come to the conclusion that on average 11% of the emissions avoided in 2015 are attributable to BASF.</p>

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

Yes

CC3.3a

Please identify the total number of projects at each stage of development, and for those in the implementation stages, the estimated CO2e savings

Stage of development	Number of projects	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	76	
To be implemented*	319	410000
Implementation commenced*	105	110000
Implemented*	2900	29600000
Not to be implemented	107	

CC3.3b

For those initiatives implemented in the reporting year, please provide details in the table below

Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	Scope	Voluntary/ Mandatory	Annual monetary savings (unit currency - as specified in CC0.4)	Investment required (unit currency - as specified in CC0.4)	Payback period	Estimated lifetime of the initiative	Comment
Energy efficiency: Processes	<p>In 2015, our global Energy Management Team has initiated and controlled the implementation of more than 130 individual measures in different plants all over the world that result in savings of fuel, electricity, steam, cooling water etc. With a burner upgrade at our worldscale steamcracker operated as joint venture with Total Petrochemicals we achieved fuel savings and corresponding CO2 emissions reduction of more than 20,000 metric tons per year based on our share. At the Ludwigshafen site, for example, we further enhanced the heat integration. With the implementation of an integrated steam network between the ethanolamine facility and the Ultrason plant we made use of significant amounts of heat which resulted in CO2 emission reduction of almost 5,000 metric tons per year through avoided steam generation in utilities boiler. The startup of the new high efficient gas-based combined heat and power plant at the Münster site of BASF Coatings additionally supported our endeavors toward efficient and environmentally friendly energy sourcing practices. All of these exemplary activities are part of our long-existing global energy efficiency management and operational excellence program. The ideas for the measures are generated in individual</p>	140000	Scope 1 Scope 2 (location-based) Scope 2 (market-based)	Voluntary	17300000	41700000	1-3 years	Ongoing	

Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	Scope	Voluntary/Mandatory	Annual monetary savings (unit currency - as specified in CC0.4)	Investment required (unit currency - as specified in CC0.4)	Payback period	Estimated lifetime of the initiative	Comment
	<p>energy efficiency analyses of the production processes that are initiated by the Energy Efficiency Team. Support for decisions on implementation and central controlling of the annually implemented measures is also handled by this team. The monetary savings reported here stem from the reduced energy consumption and relate only to those measures implemented in 2015.</p>								
Other	<p>In 2015, we have initiated and implemented more than 160 projects that lead to a reduction of raw material demand for our operations. The lower demand helps to avoid emissions resulting from the production of these raw materials, i.e. reduces our corporate carbon footprint in Scope 3 (category 1). For example, we improved the distillation column control concept in a production plant leading to increased distillation yield. In another plant, we improved the extraction process in an agitated extraction column saving significant amounts of the washing agent. Recycling of gaseous raw material was enabled by installing a compressor instead of destroying the unreacted amount in a washing tower. In a solid production process the product is sieved to separate a fines fraction which was dumped. By</p>	200000	Scope 3	Voluntary	48000000	21000000	<1 year	Ongoing	

Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	Scope	Voluntary/ Mandatory	Annual monetary savings (unit currency - as specified in CC0.4)	Investment required (unit currency - as specified in CC0.4)	Payback period	Estimated lifetime of the initiative	Comment
	modification of the separation process the fines fraction can be recycled to the reactor to reduce the raw material amount needed. By adjustment of the pH value, the recycling of unreacted raw material from a waste water stream could be improved.								

CC3.3c

What methods do you use to drive investment in emissions reduction activities?

Method	Comment
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, e.g. the German Technical Instruction on Air Quality Control restricts the concentration of nitrous oxide emissions from production of nitric acid to 0.8 g per m3 since 2010 for BASF plants. 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.
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.
Employee engagement	To enhance the awareness of employees and to realize emission reductions that are mainly based on behavioral changes,

Method	Comment
	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.
Internal price of 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.
Partnering with governments on technology development	BASF is involved in several government sponsored R&D initiatives on new technology development. For example, several projects sponsored by the German Federal Ministry of Education and Research aim at developing new technologies to use CO ₂ in the production of syngas, polymer building blocks, plastics, acrylic acid, and other products. In the EU-supported project PRODIAS we investigate white biotechnology methods and processes that allow products based on renewable materials to be produced efficiently and with fewer resources.
Dedicated budget for low carbon product R&D	We invest about half of our annual R&D expenditures (€1.953 billion total R&D expenses in 2015) on product and process innovations where the R&D target is related to energy/resource efficiency and climate protection. For example, we have developed new materials for energy-saving cooling together with leading universities and partners from industry around the world. Thanks to their special properties, these magnetocaloric materials warm up when introduced to a magnetic field and cool off again when the field is removed. Compared with today's usual compressor technology, cooling systems based on these widely available and affordable materials have the potential to reduce energy consumption by up to 35%.
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.

CC3.3d

If you do not have any emissions reduction initiatives, please explain why not

Further Information

Further information regarding the evaluation of the target Int1 against the eligibility criteria in CDP's Technical Note on Science Based Targets:

- **Boundary:** The target must cover company-wide Scope 1 and Scope 2 emissions and all relevant GHGs as required in the GHG Protocol Corporate Standard. Int1 covers 93% of Scope 1+2 emissions and therefore this criterion is considered to be fulfilled.
- **Timeframe:** The target must cover a minimum of 5 years and a maximum of 15 years from the date of announcement of the target. The target was announced in 2011, the target year is 2020 - criterion fulfilled.
- **Level of ambition:** At a minimum, the target has to be consistent with the level of decarbonization required to keep global temperature increase well below 2°C compared to pre-industrial temperatures. The CDP report "Back to the laboratory" (2015) investigated the level of ambition of Int1 using the Sectoral Decarbonization Approach as a tool. It was found that Int1 is in line with a 2°C path – criterion fulfilled.
- **Scope 3:** Companies should complete a Scope 3 screening before setting their GHG emission reduction targets. An ambitious and measureable Scope 3 target with a clear time-frame is also required when Scope 3 emissions cover a significant portion of a company's overall emissions. Int1 covers Scope 1+2, and the (non-)existence of a Scope 3 target is considered to be no qualifier when checking whether Int 1 itself is a science-based target in line with the respective definition by the SBT initiative*. Hence this criterion was skipped.
- **Reporting:** The company will disclose company-wide GHG emissions inventory on an annual basis. BASF publishes a comprehensive corporate carbon footprint in its annual report - criterion fulfilled.

For conclusion, Int1 fulfills all criteria to be considered science-based.

* Definition of a science-based target according to the SBT initiative: "Targets adopted by companies to reduce GHG emissions are considered "science-based" if they are in line with the level of decarbonization required to keep global temperature increase below 2°C compared to preindustrial temperatures, as described in the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC)." - SBT initiative, 2015: Sectoral Decarbonisation Approach, page 7.

Page: CC4. Communication

CC4.1

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	Status	Page/Section reference	Attach the document	Comment
In mainstream reports (including an integrated report) but have not used the CDSB Framework	Complete	Chapter "Energy and Climate Protection" in the BASF 2015 annual report, pp. 105-108	https://www.cdp.net/sites/2016/16/1516/Climate Change 2016/Shared Documents/Attachments/CC4.1/BASF_Report_2015.pdf	
In voluntary communications	Complete	Company Internet, start page of relevant section: http://www.basf.com/climate_protection	https://www.cdp.net/sites/2016/16/1516/Climate Change 2016/Shared Documents/Attachments/CC4.1/BASF Website Part Energy and Climate Protection_2016-06.pdf	

Further Information

Module: Risks and Opportunities

Page: CC5. Climate Change Risks

CC5.1

Have you identified any inherent climate change risks that have the potential to generate a substantive change in your business operations, revenue or expenditure? Tick all that apply

- Risks driven by changes in regulation
- Risks driven by changes in other climate-related developments

CC5.1a

Please describe your inherent risks that are driven by changes in regulation

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Cap and trade schemes	BASF's main regulatory risk derives from the EU ETS. About 80% of our EU GHG emissions i.e. roughly 50% of our global GHG	Increased operational cost	>6 years	Direct	Likely	Medium-high	We estimate that BASF may potentially be short of 2-4 million certificates per year in the 4th trading period. The	i) We mitigate the direct impact of cap and trade schemes and carbon taxes by reducing our GHG emissions and increasing our	i) Investments for reducing GHG emissions result in no net additional costs. All investments are economically reasonable, i.e.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	emissions are included. Policy measures like the Market Stability Reserve (MSR) will increase the price of certificates, possibly by the end of this trading period. After 2020, the number of certificates will decrease further and higher prices are expected. Currently virtually the complete chemical industry has been identified as being exposed to carbon leakage (i.e. relocation of production to countries with less stringent climate policies), and thus will receive certificates free of charge based on ambitious benchmarks for the chemical production plants. As a result of the above-average						financial impact will depend strongly on the ETS price. Assuming an average certificate price of 25 €/t in line with assumptions given in the impact assessment of the EU Commission, BASF would face additional annual costs of €50-100 million.	energy efficiency in line with our respective targets (-40% specific GHG emissions by 2020 compared to 2002 - BASF excl. Oil & Gas; cover 90% of our primary energy demand with certified energy management systems, DIN EN ISO 50001, by 2020 - BASF incl. Oil & Gas). The magnitude of impact is proportionally decreased by the level of reducing GHG emissions. Each year multiple projects are assessed, kicked off and implemented to improve our GHG emission performance. The scope of projects ranges from minor improvement initiatives up to full-scale R&D on	cost savings during operation will justify initial investment costs according to BASF's profitability criteria. Calculations also include a carbon price. +++ ii) Estimated costs directly related to representing BASF's interests (climate change and other topics) to EU institutions in Brussels amount to approx. €2.3 million in 2015.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>efficiency, we expect allocation for our chemical plants to be nearly sufficient. However, the extent of carbon leakage protection in the next trading period is rather unclear. Measures that decrease the amount of free allocation of certificates or the number of available allowances on the market, leading to an increase in the carbon price, result in an increase of our carbon costs. There is the additional risk of increasing electricity prices as our energy/power suppliers have to buy 100% of their emission allowances, costs which they are able to pass on.</p>							<p>process optimization, e.g. CO2 (re-)use. +++ ii) We actively engage with decision makers and governments at the regional, federal, and European level on climate and energy-related issues. For example, we are involved in designing benchmarks and allocation rules for the chemical industry. We also highlight that the post-2020 ETS reduction factor of -2.2% per year overstrains the domestic chemical sector and advocate for a global price on carbon to avoid carbon leakage. We believe that our engagement reduces the financial impact of the EU ETS on</p>	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	Depending on the specific exposure to global competition in their specific markets, also some other suppliers that are increasingly affected by the EU ETS may be able to pass on their costs, possibly resulting in increased procurement costs for BASF.							BASF. +++ All methods are considered to reduce the magnitude of impact, while the likelihood of risk remains unchanged.	
Cap and trade schemes	In the context of the international climate debate, in many regions other than Europe, there are discussions in progress on national climate action such as the introduction of national cap and trade schemes. E.g. in South Korea a system has been implemented and in China a country-wide scheme	Increased operational cost	1 to 3 years	Direct	Very likely	Medium-high	As the (financial) impact on BASF depends on the ultimate regulation, a trustworthy forecast on the financial implications of this risk is difficult. Estimates calculate with €10-100 million as order of magnitude.	We mitigate the direct impact of cap and trade schemes and carbon taxes by reducing our GHG emissions and increasing our energy efficiency in line with our respective targets (-40% specific GHG emissions by 2020 compared to 2002 - BASF excl. Oil & Gas; cover 90% of our primary energy demand with certified	Investments for reducing GHG emissions result in no net additional costs. All investments are economically reasonable, i.e. cost savings during operation will justify initial investment costs according to BASF's profitability criteria. A price for carbon is included in the profitability calculations.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>based on the experiences with pilot systems will start in 2017. BASF as a multinational company with production sites all over the world - among others in South Korea and China - is impacted by the respective national cap and trade schemes. Production costs may increase, if emissions allowances have to be purchased or the price for electricity increases. However, the more countries are implementing a cap and trade scheme or any other carbon pricing with comparable impacts on industry, the lower the magnitude of impact will be as</p>							<p>energy management systems, DIN EN ISO 50001, by 2020 - BASF incl. Oil & Gas). The magnitude of impact is proportionally decreased by the level of reducing GHG emissions. Each year multiple projects are assessed, kicked off and implemented to improve our GHG emission performance. The scope of projects ranges from minor improvement initiatives up to full-scale R&D on process optimization, e.g. CO2 (re-)use. The method is considered to reduce the magnitude of impact, being effective immediately and over an indefinite</p>	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	we then would be able to pass on our carbon costs to our customers. The magnitude of impact is calculated on the assumption that not enough countries have implemented carbon pricing schemes yet, to be able to pass on carbon costs. The figure, thus, represents the worst case.							timeframe, while the likelihood of risk remains unchanged.	
Carbon taxes	In the context of the international climate debate, there are many discussions in progress on national climate action such as the introduction of a carbon taxes. BASF has production sites in 70 countries. Dependent on the scope of a carbon levy, BASF could be directly and/or	Increased operational cost	3 to 6 years	Direct	Very likely	Medium	As the (financial) impact on BASF depends on the ultimate regulation, a trustworthy forecast on the financial implications of this risk is difficult. Very rough estimates calculate with €2-10 million as order of magnitude.	We mitigate the direct impact of cap and trade schemes and carbon taxes by reducing our GHG emissions and increasing our energy efficiency in line with our respective targets (-40% specific GHG emissions by 2020 compared to 2002 - BASF excl. Oil & Gas; cover 90% of our primary	Investments for reducing GHG emissions result in no net additional costs. All investments are economically reasonable, i.e. cost savings during operation will justify initial investment costs according to BASF's profitability criteria. A price for carbon is included in the profitability

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>indirectly affected either through increased production costs and/or through impacts from the supply chain and downstream customers. However, the more countries are implementing a cap and trade scheme or any other carbon pricing, the lower the magnitude of impact will be as we then would be able to pass on our carbon costs to our customers. The magnitude of impact is calculated on the assumption that not enough countries have implemented carbon pricing schemes yet, to be able to pass on carbon costs. The figure, thus, represents the worst case.</p>							<p>energy demand with certified energy management systems, DIN EN ISO 50001, by 2020 - BASF incl. Oil & Gas). The magnitude of impact is proportionally decreased by the level of reducing GHG emissions. Each year multiple projects are assessed, kicked off and implemented to improve our GHG emission performance. The scope of projects ranges from minor improvement initiatives up to full-scale R&D on process optimization, e.g. CO2 (re-)use. The method is considered to reduce the magnitude of impact, being effective</p>	<p>calculations.</p>

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								immediately and over an indefinite timeframe, while the likelihood of risk remains unchanged.	
Renewable energy regulation	BASF has major production facilities in Germany. Under the German renewable energy regulation (EEG) allocation of subsidies for electricity generation from renewable energy sources to the consumer of electricity has been constantly increasing (up to 63.54 €/MWh in 2016). Under current legislation BASF is not significantly burdened with EEG allocation as it produces and consumes electricity on-site. According to the current EEG	Increased operational cost	1 to 3 years	Direct	About as likely as not	Medium-high	If existing on-site steam and power plants will continue to be exempted there will be no additional financial burdens compared to status-quo. However, if this risk would materialise we estimate additional costs in the order of magnitude of €75 million, depending on the final level of charge set by legislation.	i) We mitigate the direct impact of higher energy prices by increasing our energy efficiency in line with our respective target (cover 90% of our primary energy demand with certified energy management systems, DIN EN ISO 50001, by 2020). The magnitude of impact is decreased by energy efficiency measures. Each year multiple projects are assessed, kicked off and implemented to improve our performance. The scope of projects	i) Investments for increasing energy efficiency result in no net additional costs. All investments are economically reasonable, i.e. cost savings during operation will justify initial investment costs according to BASF's profitability criteria. +++ ii) Estimated costs directly related to representing BASF's interests (climate change and other topics) to EU institutions in Brussels amount to approx. €2.3 million in 2015.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>regulations, existing plants for on-site steam and power production will continue to be exempted from EEG-surcharge for at least 2016.</p>							<p>ranges from minor improvement initiatives up to full-scale R&D on process optimization +++ ii) We actively engage with decision makers and governments on climate and energy-related issues. The regular exchange with politicians takes place at the regional, federal, and European level. +++ Both methods are considered to reduce the magnitude of impact, being effective immediately (i) / short-term (ii) and over an indefinite timeframe. The likelihood of risk remains unchanged for method (i), while method (ii) can also contribute to lower the</p>	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								likelihood.	

CC5.1b

Please describe your inherent risks that are driven by changes in physical climate parameters

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management

CC5.1c

Please describe your inherent risks that are driven by changes in other climate-related developments

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Reputation	Since climate change has been identified as a megatrend, end customers and consumers increasingly	Reduced stock price (market valuation)	>6 years	Direct	About as likely as not	High	With a current stock-price of €79.28 (year average 2015), a reputational loss resulting in a decrease of the	i) BASF holds an open dialogue with all stakeholders and reports transparently through various	i) For the open dialogue with all stakeholders on climate change issues we have three full time employees at a

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>demand climate-friendly products with a reduced GHG intensity. The chemical industry's product portfolio comprises products with a high GHG intensity (high GHG footprint). This may have a negative impact on BASF's reputation, resulting in a reduced market valuation. In addition, BASF shares could be excluded from thematic (climate) funds. BASF's market and reputational risk linked to the GHG intensity of some of its products is not significant at the moment but may rise in future if products are solely assessed on the GHG</p>						<p>stock-price by 1% results in a reduction of stock-price based value of the company by about €730 million (based on number of shares as of December 31, 2015).</p>	<p>media and initiatives (Corporate Report, CDP information request, website, investor relations events, etc.) on its climate protection strategy and its efforts to reduce GHG emissions. For example, BASF regularly publishes a comprehensive corporate carbon footprint on the GHG emissions along the value chain and the avoidance potential when using BASF products (e.g. insulation materials, fuel additives). BASF advocates life-cycle thinking and believes that information on GHG emissions associated with a given product needs to be based on a full life-cycle assessment of a</p>	<p>cost of about €150,000 each a year. +++ ii) No specific additional costs are associated with these actions as they are covered by our corporate budgets e.g. for communication or marketing.</p>

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	emissions that are associated with the production of this product.							product's impact on the environment. We explain this approach to stakeholders, e.g. at the 7th International Conference on Life Cycle Management in 2015. +++ ii) BASF collaborates with other companies and environmental organizations in the development of standard methods for calculating product- and corporate-related GHG accounts, aiming at comprehensively assessing all life-cycle phases. For example, in 2015 we have contributed to work of ICCA on avoided emissions. +++ Our actions have proven to be successful as we	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								are listed in major sustainability indices like the Dow Jones Sustainability Index or the CDLI. All methods have considerably reduced the likelihood and magnitude of impact of the described risk. However continuous activity is necessary to maintain this level of reputation.	
Changing consumer behaviour	Changing consumption patterns towards an increasing demand for climate-friendly products and technologies will most probably result in a declining demand for established or GHG-intensive products, particularly in Europe. BASF sells its products	Reduced demand for goods/services	>6 years	Indirect (Client)	More likely than not	Medium-high	Based on the assumption that 0.2 to 2.0% p.a. of GDP are economically lost in case of additional temperature increases of ~2°C, one may assume that BASF will face an equally high loss in sales per year, equivalent to a loss of EBIT of about €20-200 million.	Setting up the corporate strategy "We create chemistry for a sustainable future" in 2011, BASF has created the basic, high-level framework for addressing this risk. The strategy expresses our understanding that sustainability is becoming increasingly important as a key factor for value	We invest about half of our annual R&D expenditures (€1.953 billion total R&D expenses in 2015) on product and process innovations where the R&D target is related to energy/resource efficiency and climate protection. No specific additional

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>to many industries. Depending on the ability of the different sectors or our customers to adapt their product portfolio to the requirements of a low-carbon society, the sector or our customer will grow or shrink. Consequently, growing or shrinking sales of our products into this sector or to our customer will result, directly affecting BASF's sales and income. In addition, the necessary measures to manage and minimize the consequences of climate change may impact financial means at a</p>						<p>Alternatively, assuming that a share of GDP would be invested into mitigation of climate change and this money cannot be spent on consumer goods, cost-effective scenarios to limit global warming to 2°C conclude on 0.04 to 0.14% p.a. reduction in consumption growth rate (IPCC Assessment Report 5, WG III, Summary for Policymakers). In this case the impact on BASF would be equivalent to a loss of EBIT of about €1-10 million, again assuming that BASF's annual loss in sales correlates linearly to growth rate reduction. However, any potential partial</p>	<p>creation, and that customers want sustainable products. Day-to-day activities have to align with the strategic principles, putting BASF into the competitive position to meet customer needs, e.g.: i) Monitoring of customer needs: Respective information is considered when building long-term strategies for the business units that develop, produce, market and sell our products in line with the corporate strategy. ii) R&D in improved or new solutions that help protect the climate: We replace fossil raw materials with renewables provided they offer ecological and economic advantages.</p>	<p>costs are associated with the other activities as they are covered by our corporate budgets.</p>

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>global level. Hence, purchasing power and overall consumption could decrease, thereby negatively affecting the sales of some chemical products produced by BASF. Estimates of global annual economic losses for additional temperature increases of ~2°C are between 0.2 and 2.0% of income (IPCC, Assessment Report 5, WG II, Summary for Policymakers), considering significant uncertainty and limitations in the assessment approaches.</p>						<p>loss in sales in each of the abovementioned scenarios would be compensated by increased sales of products for climate protection.</p>	<p>Moreover, we develop products enabling our customers to achieve GHG emission reductions and adaptation to climate change. iii) Assessing the contribution of our products to sustainability in the value chain. In 2015 we conducted sustainability assessments and ratings for 95.4% of our entire portfolio of more than 60,000 specific product applications using the externally validated Sustainable Solution Steering® method. +++ Managing this risk is a continuous effort. The approach targets reduction of likelihood and magnitude of</p>	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								impact.	

CC5.1d

Please explain why you do not consider your company to be exposed to inherent risks driven by changes in regulation that have the potential to generate a substantive change in your business operations, revenue or expenditure

CC5.1e

Please explain why you do not consider your company to be exposed to inherent risks driven by physical climate parameters that have the potential to generate a substantive change in your business operations, revenue or expenditure

Our international in-company Climate Monitoring Expert Group evaluates changes in physical climate parameters and related risks at the 28 most important production sites of BASF worldwide in close cooperation with renowned research institutions using own observations and public information. We identified two potential risk drivers:

(R-p1): Changes in precipitation patterns resulting in floods or water scarcity and thus changing the availability of water as a resource for process cooling or the run-off into rivers that serve as transportation pathways for BASF.

(R-p2): Tropical cyclones such as hurricanes or typhoons may require a shutdown of our production sites or hamper normal operation by disrupting our supply chain in typical cyclone areas in North America and Asia due to strong winds and flooding in coastal regions.

The analyses for our sites show that their present local risk management plans already cover the currently existing risks by extreme weather events. A substantive impact can only originate from a significant increase of the current risk level due to the risk drivers R-p1 and R-p2. However, the impact assessment for our sites shows:

(R-p1 impact): Regional studies (e.g. KLIWAS for Germany; IPCC, AR5 WG2) show that the relevant water regimes will not change significantly by climate change within the next decade, hence the availability of water as a process resource and a transport medium will not be affected materially. Minor changes will be covered by the existing flexibility mechanisms within our production/logistics processes.

(R-p2 impact): The IPCC, AR5 report indicates that the frequency of tropical cyclones will not change significantly in areas relevant for our sites within the next 10

years. Hence, we expect no increased risk of production shutdowns/impediments.

For conclusion, climate change will not result in a significant mid-term change of the prevalent risk level at our sites when considering changes in physical climate parameters as risk drivers. These changes may become more relevant for our operations in a very long-term view, but in this case they will materialize slowly and therefore likely be covered by adaptation within our existing business processes.

Overall, the analysis highlights that we face no inherent risk driven by changes in physical climate parameters with the potential to change our business substantively.

CC5.1f

Please explain why you do not consider your company to be exposed to inherent risks driven by changes in other climate-related developments that have the potential to generate a substantive change in your business operations, revenue or expenditure

Further Information

Page: CC6. Climate Change Opportunities

CC6.1

Have you identified any inherent climate change opportunities that have the potential to generate a substantive change in your business operations, revenue or expenditure? Tick all that apply

Opportunities driven by changes in regulation

Opportunities driven by changes in physical climate parameters

Opportunities driven by changes in other climate-related developments

CC6.1a

Please describe your inherent opportunities that are driven by changes in regulation

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
International agreements	Global GHG emissions reduction targets which are backed by respective mitigation plans including different sectors of an economy such as the building, transport, power, industry, agriculture and forestry sector, will create new and boost existing markets for energy-efficient products and other products for climate protection. GHG emissions targets may be achieved by a variety of different regulatory measures such as carbon levies via cap and trade schemes or carbon tax, energy	Increased demand for existing products/services	1 to 3 years	Indirect (Client)	More likely than not	High	BASF already seizes market opportunities with its climate protection products - products which compared to relevant alternatives avoid GHG emissions over their entire life cycle. These products belong to our so-called Accelerator solutions that offer a substantial sustainability contribution in the value chain. In 2015, Accelerators generated about 26.6% of total BASF sales, thereof	BASF exploits future opportunities by investing into forward-looking R&D of already existing or new products and technologies for mitigating GHG emissions. The opportunities that have been identified are handled and exploited at business unit level. Together with our customers and partners we develop new products that look at the needs of our customers as well as the opportunities offered by the markets. This management process is supported by BASF's strategic sustainability assessment	We invest about half of our annual R&D expenditures (€1.953 billion total R&D expenses in 2015) on product and process innovations where the R&D target is related to energy/resource efficiency and climate protection.

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>efficiency or renewable energy targets, product efficiency standards or regulations, or emissions performance standards. The chemical industry is a cross-sectional industry that delivers its products and technologies to almost all sectors including those with high GHG emission abatement potential (such as the building, transport, industry or agricultural sector). Therefore current and future regulatory requirements related to climate change are connected with business</p>						<p>almost 30% can be attributed to solutions in the area of climate protection and energy efficiency. We aim to increase the number of Accelerator solutions to 28% by 2020 in order to further improve the sustainability contribution made by BASF and its customers.</p>	<p>tool, the Eco-Efficiency Analysis. The calculation of GHG emissions avoidance of individual products is part of our corporate carbon footprint calculation, which is done annually to determine BASF's climate protection performance. All tools support to maximise the likelihood and magnitude of impact of the opportunities, and they have an indefinite effect as they are used continuously.</p>	

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>opportunities for BASF as they increase the demand for existing climate protection products and open up new markets. The markets for these technologies are expected to grow at an above average rate due to regulatory influences. The potential impact of the described opportunities is not only related to an increased demand for existing products but also for new products and business services. More than one of the described regulatory measures can apply to a single sector. Selected examples are</p>								

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	given in the following rows.								
Product efficiency regulations and standards	National and international studies show an enormous cost-efficient greenhouse gas reduction potential in the building sector, particularly through the use of insulation materials. It is therefore to be expected that the number of regulations and requirements regarding the efficient use of primary energy in this area will further rise around the globe. For example, it can be expected that existing and new regulations and standards will increase energy efficiency in buildings in	Increased demand for existing products/services	3 to 6 years	Indirect (Client)	Very likely	Medium-high	Regarding the expected market development of insulation foams (forecast: 6% growth) and an average return on sales of 10%, we estimate a potential for additional EBIT contribution from energy efficiency products for the construction industry in the order of approx. €10 million in the next years.	i) Investment in forward-looking R&D of technologies for mitigating GHG emissions. Opportunity finding and product/solution development strongly involves customers and partners, considers information from market analyses, and is supported by central sustainability tools (e.g. Eco-Efficiency Analysis). +++ ii) One of our major markets with regard to our energy-efficient products is the building and construction sector. BASF is partnering with	i) We invest about half of our annual R&D expenditures (€1.953 billion total R&D expenses in 2015) on product and process innovations where the R&D target is related to energy/resource efficiency and climate protection. +++ ii) Investment sum on average below €1 million per home. +++ iii), iv) No significant costs are linked to these actions as they are mainly covered by our personnel expenses (e.g. corporate communication, general

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>Europe. With revision of the EPBD and EED we expect a much stronger focus on the building sector and better funding for renovation in the near future. This will lead to an increasing demand for innovative insulation products of the chemical industry as well as other energy-efficient product and technology solutions for the building and construction sector. BASF produces innovative products for thermal insulation of buildings. For example, the insulation needed for a nearly zero energy home</p>							<p>architects, builders and homeowners as well as participating in many projects and initiatives around the globe to show its high-end innovative products and technologies and to position itself as a solution provider and competent partner. For example, in 2015 we signed an agreement with Tianjin Eco-city to jointly develop the world's tallest certified passive house. +++ iii) We engage in several associations and standardization bodies to consult on higher</p>	<p>marketing budgets).</p>

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>standard can be achieved with Neopor®, Styrodur® and/or Elastopor® products. We expect the global market of these thermal insulation products to grow, a trend driven by energy prices and by statutory regulations such as public funds. Another energy-efficient BASF solution in the housing area is Elastocool®, a polyurethane rigid foam for insulating refrigerators with excellent insulation properties to meet energy efficiency requirements, or polyurethane solutions that insulate hot water tanks. For</p>							<p>standards for energy-efficient construction. +++ iv) In the United States, BASF has developed Green Sense Concrete – a service that helps customers improve the composition of concrete with regard to environmental impact, profitability and performance. The result is an environmentally friendly concrete produced with the help of BASF admixtures. +++ All methods support to maximise the likelihood and magnitude of impact of the opportunities, and they have</p>	

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	the flexible insulation material Slentex® and the heavy-duty panel SLENTITE®, though niche products today, we expect promising future growth potentials. We also see opportunities for new technologies such as nanotechnology: E.g. X-SEED is a hardening accelerator which saves energy and reduces GHG-emissions in concrete production.							an indefinite effect as they are used continuously.	
Cap and trade schemes	We expect the creation of new markets and a boost in existing markets for energy-efficient products and products for	Increased demand for existing products/services	1 to 3 years	Indirect (Client)	More likely than not	Medium-high	Exact statements on the financial implications cannot be made. The new	Investment in forward-looking R&D of technologies for mitigating GHG emissions. Opportunity finding and	We invest about half of our annual R&D expenditures (€1.953 billion total R&D expenses in 2015) on

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>climate protection that help to mitigate GHG emissions in industries where plants fall under any current or future carbon regulation (such as the EU ETS or any other cap and trade system or carbon tax). For use in the industry sector or chemical industry, respectively, BASF has developed a catalyst for decomposing nitrous oxide that is released in the production of adipic and nitric acid. The expansion of the EU ETS in the 3rd trading period to include the greenhouse gas nitrous oxide has led to</p>						<p>products belong to our so-called Accelerator solutions that offer a substantial sustainability contribution in the value chain. In 2015, Accelerators generated about 26.6% of total BASF sales, thereof almost 30% can be attributed to solutions in the area of climate protection and energy efficiency. We aim to increase the number of Accelerator solutions to 28% by 2020 in order to further improve the sustainability</p>	<p>product/solution development strongly involves customers and partners, considers information from market analyses, and is supported by central sustainability tools (e.g. Eco-Efficiency Analysis). Business units finally handle and exploit the opportunity. The method targets to maximise the likelihood and magnitude of impact of the opportunities, and it has an indefinite effect as it is used continuously.</p>	<p>product and process innovations where the R&D target is related to energy/resource efficiency and climate protection.</p>

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	good business opportunities for BASF, which are amplified with the introduction of further carbon regulations in other regions of the world, some of which are currently being introduced or discussed.						contribution made by BASF and its customers.		
Cap and trade schemes	An example for a future opportunity is Carbon Capture & Storage (CCS). It is assumed that CCS will play an important role as a significant future mitigation option on the global level - provided that it is economically feasible, that it leads to proven permanent storage underground and that concerns of the	Increased demand for existing products/services	Unknown	Indirect (Client)	More likely than not	Medium	Exact statements on the financial implications cannot be made. The new products belong to our so-called Accelerator solutions that offer a substantial sustainability contribution in the value chain. In 2015, Accelerators generated	i) Investment in forward-looking R&D of technologies for mitigating GHG emissions. Opportunity finding and product/solution development strongly involves customers and partners, considers information from market analyses, and is supported by central sustainability tools (e.g. Eco-	i) We invest about half of our annual R&D expenditures (€1.953 billion total R&D expenses in 2015) on product and process innovations where the R&D target is related to energy/resource efficiency and climate protection. +++ ii) The CCS cooperation is a €9 million project (capital

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>public can be answered satisfactorily. Among others the spread of this technology depends on global regulatory requirements such as emissions trading schemes or carbon tax (via the carbon price) as well as CO2 emissions performance standards. BASF develops and markets solvents for separating CO2 from flue gases in power plants, the first step of the CCS technology.</p>						<p>about 26.6% of total BASF sales, thereof almost 30% can be attributed to solutions in the area of climate protection and energy efficiency. We aim to increase the number of Accelerator solutions to 28% by 2020 in order to further improve the sustainability contribution made by BASF and its customers.</p>	<p>Efficiency Analysis). Business units finally handle and exploit the opportunity. +++ ii) To exploit the opportunities in conjunction with the CCS technology, BASF has partnered with RWE Power and the Linde Group since 2009 to develop new processes for CO2 sequestration from combustion gases in coal-fired power plants. The separation technique OASE® blue is BASF's first commercially available product of the cooperation. BASF continues the</p>	<p>costs) which is financed by all three project partners and by the German Federal Ministry of Economy and Technology.</p>

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								innovative development of the OASE® blue process.+++ All methods support to maximise the likelihood and magnitude of impact of the opportunities. They are considered to be effective long-term.	
Fuel/energy taxes and regulations	The many already existing provisions to increase the share of renewable energy, such as the EU Directive on renewable energies, the new EU 2030 targets or other national targets and promotion mechanisms for renewable energies around the globe, will lead to a further continuous	New products/business services	3 to 6 years	Indirect (Client)	Very likely	High	The International Energy Agency (IEA) estimates in their New Policies Scenario in the World Energy Outlook 2015 cumulative investments of about €1,450 billion in the sectors of wind energy	i) Investment in forward-looking R&D of technologies for mitigating GHG emissions. Opportunity finding and product/solution development strongly involves customers and partners, considers information from market analyses, and is supported by central	i) We invest about half of our annual R&D expenditures (€1.953 billion total R&D expenses in 2015) on product and process innovations where the R&D target is related to energy/resource efficiency and climate protection. +++ ii) No significant additional costs

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	increase in demand for products that go into this sector. BASF develops and markets products for the production of wind turbines, solar cells, solar collectors, solar power plants and energy storage. For example, we offer tailor-made high-value products such as Baxxodur® for the moving parts of wind-turbines. We supply sodium nitrate, an important component of thermal storage media to solar power plants.						and solar PV between 2015 and 2025. Assuming a share of 5% for the chemical business and a BASF market share of 5% with a return of sales of 10%, this results in about €350 million of additional EBIT in total.	sustainability tools (e.g. Eco-Efficiency Analysis). Business units finally handle and exploit the opportunity. +++ ii) We are members of associations such as PUEurope (Polyurethane Europe) and WindEurope and thereby influence legislation. +++ All methods support to maximise the likelihood and magnitude of impact of the opportunities. They are considered to be effective mid- to long-term.	are linked to these actions as they are mainly covered by our personnel expenses (e.g. corporate communication, general marketing budgets).
Product efficiency regulations and standards	Emissions performance regulations for passenger cars and vans	New products/business services	3 to 6 years	Indirect (Client)	Very likely	Medium-high	The share of plastics in medium-sized cars is expected to	i) Investment in forward-looking R&D of technologies for mitigating GHG	i) We invest about half of our annual R&D expenditures (€1.953 billion

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	encourage the use of new and innovative products to meet the targets established in the regulations. For example, the EU demands from automotive manufacturers a fleet average of 130 g CO2 per kilometer to be achieved by all new cars registered in the EU by 2015 and 95 g per kilometer to be achieved by 2021. This results in a market pull for innovative products and solutions from the chemical industry such as fuel additives or light-weight solutions. BASF develops and sells fuel additives such as Keropur® to						grow from today's 12-15% to over 25% in 2020. The global automotive market during this time is expected to grow by 5% p.a. primarily driven by the growth in the Asiatic market. The batteries market for all kind of alternative powertrains is also expected to grow significantly. Based on these general market trends we expect a growth of annual sales for some of our solutions in the automotive	emissions. Opportunity finding and product/solution development strongly involves customers and partners, considers information from market analyses, and is supported by central sustainability tools (e.g. Eco-Efficiency Analysis). Business units finally handle and exploit the opportunity. +++ ii) BASF actively engages in the "national platform for electric mobility". Under the initiative experts from industry, science, politics and society consult the government to	total R&D expenses in 2015) on product and process innovations where the R&D target is related to energy/resource efficiency and climate protection. +++ ii) No significant additional costs are linked to these actions as they are mainly covered by our personnel expenses (e.g. corporate communication, general marketing budgets).

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>lower fuel consumption in an average vehicle by around 1 percent. BASF offers other solutions, for example, the polyurethane system Elastoflex® E-Systems, which could enable up to 40% weight reduction in a mid-size vehicle's trunk. This weight reduction increases the fuel efficiency in any car. In addition, the worldwide demand for biodiesel is expected to significantly increase in the coming years, among others due to legislative requirements raising the share of fuels</p>						<p>industry for the next years.</p>	<p>strengthen Germany as a manufacturer and service provider in all matters relating to future powertrain vehicles and to develop Germany as a lead market. +++ All methods support to maximise the likelihood and magnitude of impact of the opportunities. They are considered to be effective mid- to long-term.</p>	

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>from renewable sources in transport (in the EU by 10% by 2020; in Brazil biofuel in gas rises from 25% to 27%). BASF offers high-quality alcoholates as catalysts for the production of biodiesel. BASF also develops materials for batteries, heat and energy management and further functional materials to position itself as chemical partner of choice for alternative powertrain vehicles. In Germany, main governmental measures are planned in the national platform for electric mobility, where BASF is</p>								

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	a member.								

CC6.1b

Please describe the inherent opportunities that are driven by changes in physical climate parameters

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Change in precipitation extremes and droughts	Climate-induced more extreme weather conditions can put plants "under stress", so that they do not provide the expected yield. BASF Plant Science has a strong development pipeline focusing on crops with higher yields and improved stress tolerance. With climate	New products/business services	>6 years	Indirect (Client)	More likely than not	High	By 2030, it is estimated that the global market for seeds and plant biotechnology will be worth in excess of US\$30 billion. We expect significant additional gross trait sales in 2020 from our plant biotechnology R&D pipeline. We anticipate growing license revenues over the next few years from our partners by expanding commercialization of e.g. the	In the field of plant biotechnology we have been collaborating with Monsanto since 2007 to develop higher yielding crops and crops that are more resistant to adverse environmental conditions such as drought. Development work is focusing on the world's most important crops corn and soybean. For example, in 2013 we have launched a new	The research expenditures for BASF Plant Science amount annually to around €150 million. Up until the end of 2015, we had invested €2 billion in plant biotechnology research. The joint collaboration budget with Monsanto is up to US\$2.5 billion.

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	conditions changing in the future, water shortage and water-borne diseases are likely to increase.						drought-tolerant corn in the coming years. We anticipate license revenues in the tens of millions per year.	drought-tolerant corn hybrid (Genuity® DroughtGuard™), the first-ever drought biotech trait. Further collaborations in the field of plant biotechnology are with e.g. KWS and Cargill. Our methods are intended to increase the realization of the opportunities thus affecting the likelihood and magnitude of impact of the described opportunities. The methods have an indefinite effect as they are used continuously.	
Change in precipitation extremes and droughts	The change in precipitation extremes and droughts is expected to raise new demand for cutting-edge water	New products/business services	>6 years	Indirect (Client)	More likely than not	Medium-high	Exact statements on the financial implications cannot be made. Nevertheless, scenario techniques respecting uncertainties and	We have established a marketing platform for Water Chemicals, which unifies all product-relevant business activities. By doing so, we are aiming	No significant additional costs are linked to these actions as they are mainly covered by our personnel expenses.

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>technologies. BASF is one of the leading suppliers of products to clarify the raw water used for the production of drinking water, treating the waste water stream and reducing sludge volumes as well as for the treatment of industrial process water and the protection of desalination plants, cooling towers and boilers. For example, in 2014 we have launched Zetag® ULTRA, a new range of flocculants with higher dewatering performance in municipal and industrial</p>						<p>probabilities of success enable us to generate a possible range of outcomes. Concerning our R&D investments in Water Chemicals, in 2020 we expect €50 million of our turnover and €11 million of our EBITDA from innovations that have been in the market for less than 5 years.</p>	<p>at further strengthening our position as a leading provider for water treatment chemicals. Our methods are intended to increase the realization of the opportunities thus affecting the likelihood and magnitude of impact of the described opportunities. The methods have an indefinite effect as they are used continuously.</p>	

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	Sokalan® antiscalants for thermal and RO membrane applications are low-phosphorous or phosphate-free and do not contribute to the eutrophication of water bodies.								
Change in precipitation extremes and droughts	More frequent extreme weather events such as hurricanes or cyclones will require the construction of new and the heightening or stabilization of existing dams, most probably resulting in increased sales of our coastal protection system. Demand for other building materials is	Increased demand for existing products/services	>6 years	Indirect (Client)	More likely than not	Low-medium	Exact statements on the financial implications cannot be made. The new products belong to our so-called Accelerator solutions that offer a substantial sustainability contribution in the value chain. In 2015, Accelerators generated about 26.6% of total BASF sales, thereof almost 30% can be attributed to solutions in the area of climate	In the area of coastal protection, BASF has worked together with universities to show the sustainability of the use of Elastocoast® and to demonstrate the long-lasting stability of this coastal protection system. Over 20 projects in more than five countries have already been carried out and are showcases of this innovative technology. Regarding the	No significant additional costs are linked to these actions as they are mainly covered by our standard budgets (e.g. personnel expenses in corporate communication, general marketing budgets).

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>also expected to increase if destroyed buildings need to be rebuilt. BASF is offering an innovative and environment-friendly solution to provide effective and stable coastal protection. Through a specially developed elastomeric polyurethane system Elastocoast®, dikes are protected by absorbing the force of the breaking waves and slowing down the water masses. BASF has also developed a lightweight utility pole made with our polyurethane</p>						<p>protection and energy efficiency. We aim to increase the number of Accelerator solutions to 28% by 2020 in order to further improve the sustainability contribution made by BASF and its customers.</p>	<p>utility poles made from Elastolit, BASF installed some as part of a pilot project in the Guangdong province of China in 2014. The poles demonstrated outstanding wind resistance during typhoon Rammansun, where more than 70,000 concrete and metal utility poles were destroyed. Our demonstration projects as management method intend to increase the realization of the opportunities thus affecting the likelihood and magnitude of impact of the described opportunities. The method has an indefinite effect as it is used continuously.</p>	

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	system Elastolit that is at least 2.5 times more wind-resistant than commonly used concrete utility poles for medium voltage. This translates to significant cost and time savings as they are more durable and can be carried and set up manually.								
Change in mean (average) temperature	As the global average temperature rises there will be more demand for products that help to manage the temperature in buildings, like e.g. exterior insulation materials and other innovative	Increased demand for existing products/services	>6 years	Indirect (Client)	More likely than not	Medium-high	Regarding the expected market development of insulation foams (forecast: 6% growth) and an average return on sales of 10%, we estimate a potential for additional EBIT contribution from energy efficiency products for the construction industry in the	BASF is partnering with architects, builders and homeowners as well as participating in many projects and initiatives around the globe to show its high-end innovative products and technologies and to position itself as a solution provider and competent	Investment sum on average below €1 million per home.

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>products that stabilize indoor temperature in the comfort zone. BASF develops and sells these products such as cool-roof polyester coatings with heat-reflecting pigment, which significantly lowers the temperature inside a house in the summer time or exterior insulation materials e.g. polystyrene foams known under the trade name Styropor®, Styrodur®, Neopor® or Elastopor®. Another example is BASF's latent heat reservoir Micronal®PCM that acts as a temperature buffer in</p>						<p>order of approx. €10 million in the next years. +++ Note: The same estimate is given under regulatory changes as driver, since the ultimate cause for the market pull cannot be distinguished.</p>	<p>partner. To this end, BASF has built several show houses in various regions. In addition, we participate in showcase projects all around the world. For example, in 2015 we signed an agreement with Tianjin Eco-city to jointly develop the world's tallest certified passive house. Our methods are intended to increase the realization of the opportunities thus affecting the likelihood and magnitude of impact of the described opportunities. The methods have an indefinite effect as they are used continuously.</p>	

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	building components. It mitigates extreme temperatures thus stabilizing the indoor temperature in the comfort zone. We cannot distinguish between regulatory and physical climate-driven market pull, therefore no figures can be fixed just for one opportunity. This applies in particular for the magnitude of impact.								

CC6.1c

Please describe the inherent opportunities that are driven by changes in other climate-related developments

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Reputation	Continuous improvement of overall reputation due to BASF's strong commitment to climate protection-related issues as well as its high competency for technology-driven climate change solutions presents an opportunity for BASF. This reputation is an important factor in building trustful partnerships with customers on new products or with suppliers on providing specific products. It also helps us to attract and retain talents, who are key to our success.	Increased stock price (market valuation)	>6 years	Direct	About as likely as not	High	With a current stock-price of €79.28 (year average 2015), a reputational gain resulting in an increase of the stock-price by 1% results in an increase of stock-price based value of the company by about €730 million (based on number of shares as of December 31, 2015).	i) BASF holds an open dialogue with all stakeholders on climate change topics and reports transparently through various media and initiatives (e.g. Corporate Report, CDP information request, website, stakeholder meetings like roadshows, media discussions, presentations at conferences, etc.) on its climate protection strategy and its efforts to reduce GHG emissions. For example, BASF regularly publishes a comprehensive corporate carbon footprint on the GHG emissions along the value chain and the avoidance potential when using BASF products (e.g. insulation materials, fuel	i) For the open dialogue with all stakeholders on climate change issues we have three full time employees at a cost of about €150,000 each a year. +++ ii) No specific additional costs are associated with these actions as they are covered by our corporate budgets e.g. for communication or marketing.

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>Finally reputation has an influence on the market valuation. The potential impact of this reputation-driven opportunity is not limited to an increased stock price but likely also entails an increased demand for existing and new products and services, premium price opportunities as well as an increase in capital availability.</p>							<p>additives), and we advocate full life-cycle assessment for concluding on a product's impact on the environment. In 2015, we highlighted especially our positions regarding COP 21, e.g. via an open letter of Kurt Bock, CEO of BASF, in the UN Global Compact-Accenture CEO study "A call to climate action". +++ ii) BASF underlines its commitment to climate protection by collaborating with other companies and environmental organizations in the development of standard methods for calculating product- and corporate-related GHG accounts, aiming at comprehensively assessing all life-</p>	

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								cycle phases. For example, in 2015 we have contributed to work of ICCA on avoided emissions. +++ Our methods are intended to increase the realization of the opportunities thus affecting the likelihood and magnitude of impact of the described opportunities. The methods have an indefinite effect as they are used continuously.	
Changing consumer behaviour	BASF enables many industries to contribute to climate protection and energy efficiency with their products and technologies. There will be a strong market demand for high efficiency products, in	Increased demand for existing products/services	>6 years	Indirect (Client)	Very likely	High	BASF already seizes market opportunities with its climate protection products - products which compared to relevant alternatives avoid GHG emissions over their	i) We manage the opportunities linked to an increasing demand for existing products for energy efficiency and climate protection as part of our daily marketing. +++ ii) Additionally, we engage in various initiatives and associations to	No significant additional costs are linked to these actions as they are mainly covered by our standard budgets (e.g. marketing and corporate communication budgets).

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>particular for those with positive cost implications (no-regret options). This goes along with an increasing climate awareness of consumers. There also may be an increasing need for expert services e.g. in the area of energy management or competencies in the offsetting market. These are business opportunities for BASF as we offer these competencies, products and services to our customers. Examples of products and technologies focused on mitigating GHG emissions in different</p>						<p>entire life cycle. These products belong to our so-called Accelerator solutions that offer a substantial sustainability contribution in the value chain. In 2015, Accelerators generated about 26.6% of total BASF sales, thereof about almost 30% can be attributed to solutions in the area of climate protection and energy efficiency. We aim to increase the number of Accelerator solutions to 28% by 2020 in order to further improve the</p>	<p>promote the benefits of products for energy efficiency and climate protection. For example, we are member of PUEurope (Polyurethane Europe) and WindEurope. In the USA, our program NEED (Neighborhood Energy Efficiency Drive) supports homeowners with recommendations for decreasing energy consumption by using BASF products at home renovation. +++ Our methods are intended to increase the realization of the opportunities thus affecting the likelihood and magnitude of impact of the described opportunities. The methods have an</p>	

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	sectors include: i) Construction: exterior insulation materials, insulating materials for windows, latent heat reservoir material, cement additives; ii) Energy: epoxy resin systems for wind turbine blades, coatings for wind turbine blades, chemicals for solar thermal systems, basic chemicals for the production of silicon based solar cells; iii) Mobility: fuel additives, plastics for lightweight automobile body construction; iv) Agriculture: nitrification inhibitor; v) Oil & Gas						sustainability contribution made by BASF and its customers.	indefinite effect as they are used continuously.	

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	segment: Gas as climate-friendly fossil energy source.								
Changing consumer behaviour	Global warming forces many countries to look for new (energy) technologies. Renewable energies and fuel cell technologies are an attractive alternative to oil dependency with a tangible environmental benefit. BASF develops markets and sells components for fuel cell technologies as well as products that go into the renewable energy sector e.g. process chemicals contributing toward	New products/business services	3 to 6 years	Indirect (Client)	Very likely	High	Exact statements on the financial implications cannot be made. The new products belong to our so-called Accelerator solutions that offer a substantial sustainability contribution in the value chain. In 2015, Accelerators generated about 26.6% of total BASF sales, thereof almost 30% can be attributed to solutions in the area of climate protection and energy efficiency. We	BASF identifies future opportunities in two ways. i) A systematic strategic approach is carried out by our central Science Relations & Innovation Management department. Our IT tool that systematically steers BASF's R&D process contains variables indicating the influence of any specific innovation on energy and climate protection issues. ii) The operating units and R&D departments identify opportunities on a project basis. Intensive exchange with our customers and partners from	We invest about half of our annual R&D expenditures (€1.953 billion total R&D expenses in 2015) on product and process innovations where the R&D target is related to energy/resource efficiency and climate protection.

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>increasing solar cells' performance. Another demand is storage of power and heat. The right chemical material is often the key to new technologies. Our broad material know-how enables us to bring forward innovative solutions. Most of these opportunities are not limited to the next five years but extend for the next more than 10 years.</p>						<p>aim to increase the number of Accelerator solutions to 28% by 2020 in order to further improve the sustainability contribution made by BASF and its customers.</p>	<p>industry and science leads to the identification of market trends and opportunities. Concerning energy & climate issues, the whole process is conducted in close interaction with the BASF Management Team for Climate Protection. One example for a new product resulting from our management approach is MasterFlow 9800, a bulk supplied offshore grout enhancing productivity and safety that was launched in 2015. Our methods are intended to increase the realization of the opportunities thus affecting the likelihood and magnitude of impact of the described opportunities. The</p>	

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								methods have an indefinite effect as they are used continuously.	

CC6.1d

Please explain why you do not consider your company to be exposed to inherent opportunities driven by changes in regulation that have the potential to generate a substantive change in your business operations, revenue or expenditure

CC6.1e

Please explain why you do not consider your company to be exposed to inherent opportunities driven by physical climate parameters that have the potential to generate a substantive change in your business operations, revenue or expenditure

CC6.1f

Please explain why you do not consider your company to be exposed to inherent opportunities driven by changes in other climate-related developments that have the potential to generate a substantive change in your business operations, revenue or expenditure

Further Information

Module: GHG Emissions Accounting, Energy and Fuel Use, and Trading

Page: CC7. Emissions Methodology

CC7.1

Please provide your base year and base year emissions (Scopes 1 and 2)

Scope	Base year	Base year emissions (metric tonnes CO2e)
Scope 1	Tue 01 Jan 2002 - Tue 31 Dec 2002	21693000
Scope 2 (location-based)	Tue 01 Jan 2002 - Tue 31 Dec 2002	5243000
Scope 2 (market-based)		

CC7.2

Please give the name of the standard, protocol or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions

Please select the published methodologies that you use

Please select the published methodologies that you use

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

CC7.2a

If you have selected "Other" in CC7.2 please provide details of the standard, protocol or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions

CC7.3

Please give the source for the global warming potentials you have used

Gas	Reference
CO2	IPCC Fourth Assessment Report (AR4 - 100 year)
CH4	IPCC Fourth Assessment Report (AR4 - 100 year)
SF6	IPCC Fourth Assessment Report (AR4 - 100 year)
N2O	IPCC Fourth Assessment Report (AR4 - 100 year)
Other: HFC-23	IPCC Fourth Assessment Report (AR4 - 100 year)
Other: HFC-32	IPCC Fourth Assessment Report (AR4 - 100 year)
Other: HFC-125	IPCC Fourth Assessment Report (AR4 - 100 year)
Other: HFC-134a	IPCC Fourth Assessment Report (AR4 - 100 year)
Other: HFC-143a	IPCC Fourth Assessment Report (AR4 - 100 year)
Other: HFC-152a	IPCC Fourth Assessment Report (AR4 - 100 year)
Other: HFC-227ea	IPCC Fourth Assessment Report (AR4 - 100 year)

Gas	Reference
Other: HFC-245ca	IPCC Fourth Assessment Report (AR4 - 100 year)
Other: HFC-245fa	IPCC Fourth Assessment Report (AR4 - 100 year)
Other: HFC-365mfc	IPCC Fourth Assessment Report (AR4 - 100 year)
Other: PFC-218	IPCC Fourth Assessment Report (AR4 - 100 year)
NF3	IPCC Fourth Assessment Report (AR4 - 100 year)

CC7.4

Please give the emissions factors you have applied and their origin; alternatively, please attach an Excel spreadsheet with this data at the bottom of this page

Fuel/Material/Energy	Emission Factor	Unit	Reference
Other: Please see attached Excel spreadsheet under "Further Information"			

Further Information

- Note regarding CC7.3: The source information applies to the GHG emissions data in the reporting year (2015), while the base year (2002) emissions have been derived using global warming potentials from the IPCC Second Assessment Report. It was found that the change of GWP source has no material impact on the data for 2002 and therefore the results were not recalculated in order to maintain consistency with earlier reporting.
- Note regarding CC7.4: Emission factors are given in the attached Excel spreadsheet "CDP-worksheet-for-question-cc7.4.xlsx".

Attachments

Page: CC8. Emissions Data - (1 Jan 2015 - 31 Dec 2015)

CC8.1

Please select the boundary you are using for your Scope 1 and 2 greenhouse gas inventory

Other: Fully consolidated companies' production sites worldwide. The emissions of joint operations were included pro rata, based on BASF's stake.

CC8.2

Please provide your gross global Scope 1 emissions figures in metric tonnes CO₂e

18375000

CC8.3

Does your company have any operations in markets providing product or supplier specific data in the form of contractual instruments?

Yes

CC8.3a

Please provide your gross global Scope 2 emissions figures in metric tonnes CO₂e

Scope 2, location-based	Scope 2, market-based (if applicable)	Comment
3795000	4210000	

CC8.4

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

CC8.4a

Please 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	Relevance of Scope 1 emissions from this source	Relevance of location-based Scope 2 emissions from this source	Relevance of market-based Scope 2 emissions from this source (if applicable)	Explain why the source is excluded
GHG emissions from mobile combustion	Emissions are not relevant	No emissions from this source	No emissions from this source	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).
CO2 emissions from administrative sites/offices (e.g. sales offices)	Emissions are not relevant	Emissions are not relevant	Emissions are not relevant	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

Source	Relevance of Scope 1 emissions from this source	Relevance of location-based Scope 2 emissions from this source	Relevance of market-based Scope 2 emissions from this source (if applicable)	Explain why the source is excluded
				administrative sites. GHG emissions from assets leased by BASF are accounted for as Scope 3 emissions.

CC8.5

Please estimate the level of uncertainty of the total gross global Scope 1 and 2 emissions figures that you have supplied and specify the sources of uncertainty in your data gathering, handling and calculations

Scope	Uncertainty range	Main sources of uncertainty	Please expand on the uncertainty in your data
Scope 1	More than 2% but less than or equal to 5%	Data Gaps Metering/ Measurement Constraints	Data gaps: BASF captures and consolidates all environmentally relevant data in BASF's in-company Responsible Care database. The system itself does not allow any data gaps as we have established a data input review process that requires the multiple eye principle. Data are also reviewed relative to production volume and historical emissions data. However, data gaps arise from the fact that BASF does not collect GHG emissions from all emission sources. GHG emissions from mobile combustion and administrative sites are not accounted for in our GHG emissions reporting system as they have been projected to be collectively much less than 2% of BASF's total GHG emissions. +++ Metering/Measurement constraints: According to BASF's Responsible Care guidance document GHG emissions can be determined according to the following methods: a) Measurement using standardized methods or methods accepted by governmental authorities; b) Calculation using nationally or internationally agreed estimation methods and emission factors. Both methods for determining GHG emissions are a potential source for inaccuracy and thus linked to an uncertainty in the provided data. We use measuring techniques and equipment (e.g. for the continuous measurement of N2O) that are state of the art or even stipulated by law (e.g. DIN). However, uncertainty may arise e.g. from a faulty

Scope	Uncertainty range	Main sources of uncertainty	Please expand on the uncertainty in your data
			<p>measurement, from a not accurately determined carbon content of a fuel or from an estimation method based on a discontinuous measurement. BASF's worldwide GHG emissions data show the lowest sources of error for Europe and new plants, partly because of the measurement equipment being of higher accuracy, high frequency of measuring and the legal regulations and requirements. About 80% of our Scope 1 emissions in Europe (i.e. about 50% of our global emissions) are subject to the EU ETS and thus to directives and requirements of the Monitoring and Reporting Guidelines of the European Commission (EU Directive 2007/589/EG). All emissions subject to EU ETS have to be reported with a maximum uncertainty of +/-1.5 %.</p>
Scope 2 (location-based)	More than 2% but less than or equal to 5%	Data Gaps Assumptions Metering/ Measurement Constraints	<p>Data gaps: BASF captures and consolidates all environmentally relevant data in BASF's in-company Responsible Care database. The system itself does not allow any data gaps as we have established a data input review process that requires the multiple eye principle. Data are also reviewed relative to production volume, energy data and historical emissions data. However, data gaps arise from the fact that BASF does not collect the electricity and heat supply figures from administrative sites. The respective Scope 2 emissions were determined to be lower than 0.1% of BASF's total GHG emissions. +++ Assumptions: The applied CO2 factors for imported steam are based on best available assumptions on the effectiveness of the steam generation and the fuel basis in the supplier's generation unit in the case when no factor is explicitly specified. The uncertainty is estimated to be more than 2% but less than 5% for Scope 2 emissions from steam import. +++ Metering/measurement constraints: Uncertainties due to measurement constraints of electricity and steam supply are overall estimated to be lower than 1% as these streams represent also the basis for the energy billing.</p>
Scope 2 (market-based)	More than 2% but less than or equal to 5%	Data Gaps Assumptions Metering/ Measurement Constraints	<p>Data gaps: BASF captures and consolidates all environmentally relevant data in BASF's in-company Responsible Care database. The system itself does not allow any data gaps as we have established a data input review process that requires the multiple eye principle. Data are also reviewed relative to production volume, energy data and historical emissions data. However, data gaps arise from the fact that BASF does not collect the electricity and heat supply figures from administrative sites. The respective Scope 2 emissions were determined to be lower than 0.1% of BASF's total GHG emissions. +++ Assumptions: The applied CO2 factors for imported steam are based on best available assumptions on the effectiveness of the steam generation and the fuel basis in the supplier's generation unit in the case when no factor is explicitly specified. The uncertainty is estimated to be more than 2% but less than 5% for Scope 2 emissions from steam import. Further uncertainty results from the lack of information about the residual mix in those countries where no supplier-specific emission factors were applied. Following the Scope 2 guidance, the location-based data were used in these cases. +++ Metering/measurement constraints: Uncertainties due to measurement constraints of electricity and steam supply are overall estimated to be lower than 1% as these streams represent also the basis for the energy billing.</p>

CC8.6

Please indicate the verification/assurance status that applies to your reported Scope 1 emissions

Third party verification or assurance process in place

CC8.6a

Please provide further details of the verification/assurance undertaken for your Scope 1 emissions, and attach the relevant statements

Verification or assurance cycle in place	Status in the current reporting year	Type of verification or assurance	Attach the statement	Page/section reference	Relevant standard	Proportion of reported Scope 1 emissions verified (%)
Annual process	Complete	Limited assurance	https://www.cdp.net/sites/2016/16/1516/Climate Change 2016/Shared Documents/Attachments/CC8.6a/BASF15_CDP Verification KPMG_final.pdf	1-7	ISAE3000	100
Annual process	Complete	Limited assurance	https://www.cdp.net/sites/2016/16/1516/Climate Change 2016/Shared Documents/Attachments/CC8.6a/BASF15_CDP Verification KPMG_final.pdf	1-7	ISAE 3410	100

CC8.6b

Please provide further details of the regulatory regime to which you are complying that specifies the use of Continuous Emissions Monitoring Systems (CEMS)

Regulation	% of emissions covered by the system	Compliance period	Evidence of submission
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CC8.7

Please indicate the verification/assurance status that applies to at least one of your reported Scope 2 emissions figures

Third party verification or assurance process in place

CC8.7a

Please provide further details of the verification/assurance undertaken for your location-based and/or market-based Scope 2 emissions, and attach the relevant statements

Location-based or market-based figure?	Verification or assurance cycle in place	Status in the current reporting year	Type of verification or assurance	Attach the statement	Page/Section reference	Relevant standard	Proportion of reported Scope 2 emissions verified (%)
Location-based	Annual process	Complete	Limited assurance	https://www.cdp.net/sites/2016/16/1516/Climate Change 2016/Shared Documents/Attachments/CC8.7a/BASF15_CDP Verification KPMG_final.pdf	1-7	ISAE3000	100
Location-based	Annual process	Complete	Limited assurance	https://www.cdp.net/sites/2016/16/1516/Climate Change 2016/Shared Documents/Attachments/CC8.7a/BASF15_CDP Verification KPMG_final.pdf	1-7	ISAE 3410	100
Market-	Annual	Complete	Limited	https://www.cdp.net/sites/2016/16/1516/Climate Change	1-7	ISAE3000	100

Location-based or market-based figure?	Verification or assurance cycle in place	Status in the current reporting year	Type of verification or assurance	Attach the statement	Page/Section reference	Relevant standard	Proportion of reported Scope 2 emissions verified (%)
based	process		assurance	2016/Shared Documents/Attachments/CC8.7a/BASF15_CDP Verification KPMG_final.pdf			
Market-based	Annual process	Complete	Limited assurance	https://www.cdp.net/sites/2016/16/1516/Climate Change 2016/Shared Documents/Attachments/CC8.7a/BASF15_CDP Verification KPMG_final.pdf	1-7	ISAE 3410	100

CC8.8

Please identify if any data points have been verified as part of the third party verification work undertaken, other than the verification of emissions figures reported in CC8.6, CC8.7 and CC14.2

Additional data points verified	Comment
Progress against emission reduction target	
Year on year change in emissions (Scope 1 and 2)	
Year on year emissions intensity figure	
Other: Sustainability performance information in BASF 2015 annual report	All sustainability-related performance information according to GRI G4 in the "BASF Report 2015", published under www.bericht.basf.com/2015/en , was subject of the assurance engagement.

CC8.9

Are carbon dioxide emissions from biologically sequestered carbon relevant to your organization?

No

CC8.9a

Please provide the emissions from biologically sequestered carbon relevant to your organization in metric tonnes CO2

Further Information

Page: CC9. Scope 1 Emissions Breakdown - (1 Jan 2015 - 31 Dec 2015)

CC9.1

Do you have Scope 1 emissions sources in more than one country?

Yes

CC9.1a

Please break down your total gross global Scope 1 emissions by country/region

Country/Region	Scope 1 metric tonnes CO2e
Belgium	3670000
Brazil	72000

Country/Region	Scope 1 metric tonnes CO2e
China	308000
France	69000
Germany	9217000
India	28000
Italy	53000
Japan	9000
South Korea	390000
Spain	39000
United States of America	3936000
Rest of world	584000

CC9.2

Please indicate which other Scope 1 emissions breakdowns you are able to provide (tick all that apply)

- By facility
- By GHG type

CC9.2a

Please break down your total gross global Scope 1 emissions by business division

Business division	Scope 1 emissions (metric tonnes CO2e)

CC9.2b

Please break down your total gross global Scope 1 emissions by facility

Facility	Scope 1 emissions (metric tonnes CO2e)	Latitude	Longitude
Ludwigshafen, Germany	7638000	49.495935	8.431191
Antwerp, Belgium	3669000	51.324050	4.285598
Kuantan, Malaysia	267000	3.967425	103.423724
Freeport, USA	901000	29.004413	-95.393282
Geismar, USA	808000	30.210215	-91.034488
Rest of world	5092000		

CC9.2c

Please break down your total gross global Scope 1 emissions by GHG type

GHG type	Scope 1 emissions (metric tonnes CO2e)
CO2	17567000
CH4	88000
N2O	600000
HFCs	119000
PFCs	0
SF6	1000
NF3	0

CC9.2d

Please break down your total gross global Scope 1 emissions by activity

Activity	Scope 1 emissions (metric tonnes CO2e)

Further Information

BASF reports GHG emissions for selected Verbund sites, countries, regions and globally. However, our internal GHG emissions accounting and reporting system captures GHG emissions from all sites and plants and also at business division level. We manage GHG emissions at plant level. The data at business division level are for internal purposes only.

Page: CC10. Scope 2 Emissions Breakdown - (1 Jan 2015 - 31 Dec 2015)

CC10.1

Do you have Scope 2 emissions sources in more than one country?

Yes

CC10.1a

Please break down your total gross global Scope 2 emissions and energy consumption by country/region

Country/Region	Scope 2, location-based (metric tonnes CO2e)	Scope 2, market-based (metric tonnes CO2e)	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low carbon electricity, heat, steam or cooling accounted in market-based approach (MWh)
Belgium	539000	647000	1985000	0
Brazil	28000	28000	216000	0
China	596000	596000	1111000	0
France	14000	93000	138000	0
Germany	430000	614000	1295000	0
India	50000	50000	63000	0
Italy	25000	52000	72000	0
Japan	41000	41000	95000	0
South Korea	284000	284000	777000	0
Spain	31000	30000	127000	0
United States of America	1345000	1339000	2965000	9940
Rest of world	412000	436000	1002000	0

CC10.2

Please indicate which other Scope 2 emissions breakdowns you are able to provide (tick all that apply)

By facility

CC10.2a

Please break down your total gross global Scope 2 emissions by business division

Business division	Scope 2 emissions, location based (metric tonnes CO2e)	Scope 2 emissions, market-based (metric tonnes CO2e)
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CC10.2b

Please break down your total gross global Scope 2 emissions by facility

Facility	Scope 2 emissions, location based (metric tonnes CO2e)	Scope 2 emissions, market-based (metric tonnes CO2e)
Ludwigshafen, Germany	0	0
Antwerp, Belgium	539000	646000
Kuantan, Malaysia	128000	128000
Freeport, USA	163000	163000
Geismar, USA	76000	76000
Rest of world	2889000	3197000

CC10.2c

Please break down your total gross global Scope 2 emissions by activity

Activity	Scope 2 emissions, location based (metric tonnes CO2e)	Scope 2 emissions, market-based (metric tonnes CO2e)
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Further Information

BASF reports GHG emissions for selected Verbund sites, countries, regions and globally. However, our internal GHG emissions accounting and reporting system captures GHG emissions from all sites and plants and also at business division level. We manage GHG emissions at plant level. The data at business division level are for internal purposes only.

Page: CC11. Energy

CC11.1

What percentage of your total operational spend in the reporting year was on energy?

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

CC11.2

Please state how much heat, steam, and cooling in MWh your organization has purchased and consumed during the reporting year

Energy type	Energy purchased and consumed (MWh)
Heat	0
Steam	3469000
Cooling	0

CC11.3

Please state how much fuel in MWh your organization has consumed (for energy purposes) during the reporting year

66611000

CC11.3a

Please complete the table by breaking down the total "Fuel" figure entered above by fuel type

Fuels	MWh
Anthracite	1219000
Diesel/Gas oil	310000
Distillate fuel oil No 6	12000
Natural gas	44679000
Other: Residual fuels (usually from own production and not purchased)	20391000

CC11.4

Please provide details of the electricity, heat, steam or cooling amounts that were accounted at a low carbon emission factor in the market-based Scope 2 figure reported in CC8.3a

Basis for applying a low carbon emission factor	MWh consumed associated with low carbon electricity, heat, steam or cooling	Comment
Contract with suppliers or utilities, supported by energy attribute certificates	9940	

CC11.5

Please report how much electricity you produce in MWh, and how much electricity you consume in MWh

Total electricity consumed (MWh)	Consumed electricity that is purchased (MWh)	Total electricity produced (MWh)	Total renewable electricity produced (MWh)	Consumed renewable electricity that is produced by company (MWh)	Comment
14971000	6377000	10260000	0	0	

Further Information

Page: **CC12. Emissions Performance**

CC12.1

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

Decreased

CC12.1a

Please 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

Reason	Emissions value (percentage)	Direction of change	Please explain and include calculation
Emissions reduction activities	1.5	Decrease	BASF's Scope 1 and Scope 2 emissions decreased by 1.5% in 2015 compared to 2014 due to emissions reduction activities implemented in 2015. This corresponds to about 326,000 metric tons (t) of CO ₂ e reduced. Our total Scope 1 and Scope 2 emissions in the previous year was 22,361,000 t CO ₂ e, therefore we arrived at 1.5% through $(326,000/22,361,000)*100 = 1.5\%$. Major drivers for the emission reduction have been measures to increase the energy efficiency of processes, and to reduce process emissions. Examples: (1) We implemented about 130 individual energy efficiency measures in different plants all over the world. These

Reason	Emissions value (percentage)	Direction of change	Please explain and include calculation
			<p>measures resulted in savings of fuel, electricity, steam, cooling water and ultimately GHG emissions of about 140,000 t CO₂e. For example, we upgraded a burner at our worldscale steamcracker operated as joint venture with Total Petrochemicals, leading to fuel savings and corresponding GHG emissions reduction of more than 20,000 t CO₂e per year based on our share. (2) In one of our DNT plants we implemented measures to reduce the emissions of nitrous oxide, resulting in a reduction of GHG emissions of 110,000 t CO₂e. (3) In several plants we reduced emissions by fuel switching, resulting in an overall reduction of GHG emissions of 40,000 t CO₂e. For example, at our plant in Hannibal (Missouri) we switched from a coal-fired boiler to a boiler using natural gas. (4) Minor process optimizations in several plants (e.g. better recovery of waste streams) led to GHG emission reduction of 10,000 t CO₂e. (5) We implemented proposals for energy savings and carbon emission reductions collected through our employee suggestion schemes, resulting in a reduction of about 26,000 t CO₂e. +++ The GHG emission reduction measures are part of our long-existing effort to reduce GHG emissions. Since 1990, we have been able to lower our overall GHG emissions from BASF operations (excluding Oil & Gas) by 49.8% and even reduce specific emissions by 74.4%. We estimate that all measures implemented in the past result in more than 29,600,000 t CO₂e avoided annually. This shows that we have already tapped the major share of our reduction potential and our continuous improvement efforts have to target smaller reductions.</p>
Divestment	1.4	Decrease	<p>The emissions from our operations decreased by 1.4% (corresponding to 311,000 metric tons of CO₂e) in 2015 compared to 2014 due to the divestment of some businesses in several countries (e.g. Canada, Brazil, Argentina, and USA). For example, we sold our business with white expandable polystyrene (EPS) in North and South America, and we concluded the sale of our global paper hydrous kaolin business in 2015.</p>
Acquisitions	0.4	Increase	<p>In 2015 BASF acquired several small businesses in various countries (e.g. Taiwan, Mexico) which overall accounted for an increase of 0.4% (corresponding to 94,000 metric tons of CO₂e) of our Scope 1 and Scope 2 emissions in comparison to 2014. For example, we concluded the acquisition of the business of Taiwan Sheen Soon Co. Ltd., a leading manufacturer of precursors for adhesives based on thermoplastic polyurethanes.</p>
Mergers			
Change in output	0.6	Increase	<p>We raised sales volumes in 2015. If no measures to reduce emissions had been introduced, i.e. assuming that the GHG intensity of our various businesses in 2014 had continued to apply in 2015, the increased production would have resulted in an increase in Scope 1 and Scope 2 GHG emissions of 0.6% (corresponding to 131,000 metric tons of CO₂e) in 2015 in comparison to 2014.</p>
Change in methodology			
Change in boundary			
Change in physical operating			

Reason	Emissions value (percentage)	Direction of change	Please explain and include calculation
conditions			
Unidentified			
Other	1.0	Increase	BASF is accounting GHG emission from more than 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 2015, changes in local operating conditions resulted in a net increase of emissions of 1.0% (corresponding to 221,000 metric tons of CO2e) compared to 2014.

CC12.1b

Is your emissions performance calculations in CC12.1 and CC12.1a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?

Location-based

CC12.2

Please describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tonnes CO2e per unit currency total revenue

Intensity figure =	Metric numerator (Gross global combined Scope 1 and 2 emissions)	Metric denominator: Unit total revenue	Scope 2 figure used	% change from previous year	Direction of change from previous year	Reason for change
0.000315	metric tonnes CO2e	70449000000	Location-based	4.6	Increase	BASF's GHG emissions per unit total revenue increased by 4.6% in 2015 compared with 2014. The absolute Scope 1 and Scope 2 emissions decreased by 0.9% in 2015 compared with 2014, however revenues fell by even 5.2%, resulting in an overall increase of the indicator value. The decrease in revenues was driven mostly through a significant drop in prices – especially in the Chemicals segment – in relation to oil price developments. In addition, an asset swap with Gazprom completed at the end of September 2015 particularly contributed to the decline. This transaction meant the discontinuation of contributions to the Oil & Gas segment mainly from the natural gas trading and storage business as of the fourth quarter of 2015. While the transaction had a major impact in financial terms, the gas trading and storage business was of no relevance for the Scope 1 and Scope 2 emissions, because it was not accounted for within the boundaries of these scopes. Higher sales volumes were not able to counterbalance the negative effects on revenues, however are estimated to account for an increase of Scope 1+2 emissions of 0.6% in 2015 compared to 2014. This increase as well as additional emissions resulting from changes in standard operating conditions in our sites (accounting for +1.0% of Scope 1+2 emissions) and acquisitions (+0.4% of Scope 1+2 emissions) were overcompensated by the effect of our emission reduction measures (accounting for -1.5% of Scope 1+2 emissions, e.g. more than 130 individual energy efficiency measures in different plants all over the world) as well as the impact of divestments (-1.4% of Scope 1+2 emissions). Therefore, overall absolute emissions in 2015 decreased by 0.9% compared to 2014 in the final balance. +++ For information – intensity figure in 2014: 0.000301 metric tons CO2e / unit total revenue, based on a numerator of 22,361,000 (t CO2e) and a denominator of 74,326,000,000 (unit total revenue).

Please provide any additional intensity (normalized) metrics that are appropriate to your business operations

Intensity figure =	Metric numerator (Gross global combined Scope 1 and 2 emissions)	Metric denominator	Metric denominator: Unit total	Scope 2 figure used	% change from previous year	Direction of change from previous year	Reason for change
201.0	metric tonnes CO2e	full time equivalent (FTE) employee	110319	Location-based	0.1	Decrease	<p>BASF reduced its greenhouse gas emissions per FTE employee in 2015 compared with 2014 by 0.1%. The number of BASF full time equivalent employees decreased slightly by 0.8% while absolute Scope 1 and Scope 2 emissions decreased by 0.9%. The reduction of headcount came in part from the sale of portions of the pharmaceutical ingredients and services business to Siegfried Holding AG, based in Zofingen, Switzerland, as well as from the asset swap with Gazprom. The decrease of GHG emissions in 2015 resulted from our emission reduction measures (accounting for -1.5% of Scope 1+2 emissions, e.g. more than 130 individual energy efficiency measures in different plants all over the world) as well as the impact of divestments (-1.4% of Scope 1+2 emissions), which overcompensated the impact of higher output from our businesses (estimated to account for +0.6% of Scope 1 and Scope 2 emissions) as well as additional emissions resulting from changes in standard operating conditions in our sites (accounting for +1.0% of Scope 1+2 emissions) and acquisitions (+0.4% of Scope 1+2 emissions). Therefore, overall absolute emissions in 2015 decreased by 0.9% compared to 2014 in the final balance. +++ For information – intensity figure in 2014: 201.1 metric tons CO2e / FTE (rounded to 201 in last year's reporting to CDP), based on a numerator of 22,361,000 (t CO2e) and a denominator of 111,168 (FTE).</p>

Further Information**Page: CC13. Emissions Trading**

CC13.1

Do you participate in any emissions trading schemes?

Yes

CC13.1a

Please complete the following table for each of the emission trading schemes in which you participate

Scheme name	Period for which data is supplied	Allowances allocated	Allowances purchased	Verified emissions in metric tonnes CO2e	Details of ownership
European Union ETS	Sat 01 Jan 2011 - Sat 31 Dec 2011	10200000	0	8340000	Facilities we own and operate
European Union ETS	Sun 01 Jan 2012 - Mon 31 Dec 2012	10200000	0	8340000	Facilities we own and operate
European Union ETS	Tue 01 Jan 2013 - Tue 31 Dec 2013	13200000	0	13300000	Facilities we own and operate
European Union ETS	Wed 01 Jan 2014 - Wed 31 Dec 2014	13090000	800000	12994000	Facilities we own and operate
European Union ETS	Thu 01 Jan 2015 - Thu 31 Dec 2015	12400000	415107	13300000	Facilities we own and operate
European Union ETS	Fri 01 Jan 2016 - Sat 31 Dec 2016	12476000	157000	0	Facilities we own and operate

Scheme name	Period for which data is supplied	Allowances allocated	Allowances purchased	Verified emissions in metric tonnes CO2e	Details of ownership
Other: Swiss ETS	Sat 01 Jan 2011 - Sat 31 Dec 2011	35054	0	34576	Facilities we own and operate
Other: Swiss ETS	Sun 01 Jan 2012 - Mon 31 Dec 2012	35054	0	34000	Facilities we own and operate
Other: Swiss ETS	Tue 01 Jan 2013 - Tue 31 Dec 2013	33886	5212	46425	Facilities we own and operate
Other: Swiss ETS	Wed 01 Jan 2014 - Wed 31 Dec 2014	37480	3466	48884	Facilities we own and operate
Other: Swiss ETS	Thu 01 Jan 2015 - Thu 31 Dec 2015	36957	7440	47300	Facilities we own and operate
Other: Swiss ETS	Fri 01 Jan 2016 - Sat 31 Dec 2016	31513	0	0	Facilities we own and operate
Other: Shanghai Pilot ETS	Tue 01 Jan 2013 - Tue 31 Dec 2013	1037977	29844	1067821	Facilities we own and operate
Other: Shanghai Pilot ETS	Wed 01 Jan 2014 - Wed 31 Dec 2014	1052113	18173	1070286	Facilities we own and operate
Other: Shanghai Pilot ETS	Thu 01 Jan 2015 - Thu 31 Dec 2015	1118197	0	1039260	Facilities we own and operate
Other: Shanghai Pilot ETS	Fri 01 Jan 2016 - Sat 31 Dec 2016	1251159	0	0	Facilities we own and operate

What is your strategy for complying with the schemes in which you participate or anticipate participating?

Our overall strategy for compliance is to effectively reduce GHG emissions in the most cost-efficient way as this reflects our understanding of sustainability. This strategy comprises the continuous implementation of our in-house GHG reduction programs (decrease specific GHG emissions in BASF operations excl. Oil & Gas by 40% until the year 2020 based on 2002; cover 90% of our primary energy demand of BASF operations incl. Oil & Gas with certified energy management systems, DIN EN ISO 50001, by 2020), the realization of CDM and JI projects and the trading of emission allowances. For the second trading period of the EU ETS, BASF had expected a relatively balanced result between required and granted emission allowances for the entire European Group. In fact our efficient processes allowed for a surplus of certificates in many cases. However, some BASF sites had to bear relatively high costs due to allowances needed for emissions from BASF's own steam and electricity generation. Remaining surpluses after internal balancing of required and granted certificates have been kept to cover future demands in the third trading period. Current allocations and emissions forecast for the 3rd trading period will leave BASF Group net short of allocations, driven by our power plants (our greenhouse gas-intensive chemical plants still operate at above-average efficiency compared with European emissions trading benchmarks). BASF has prepared for the third period by implementing an adequate and flexible strategy. This takes into account all kinds of emission reduction measures, e.g. use of abatement technology, increase in energy efficiency, as well as the use of project-based carbon credits and a purchase strategy for EUA. The three regionally limited trading schemes in which we participate apply to almost all segments of our businesses. The EU ETS covers BASF's power plants, major steam vessels or compressor stations, the former supplying many of BASF's production plants with electricity and steam. From the beginning of the third trading period even more chemical installations are now subject to the EU ETS covering with just a few exceptions all BASF business segments.

CC13.2

Has your organization originated any project-based carbon credits or purchased any within the reporting period?

Yes

CC13.2a

Please provide details on the project-based carbon credits originated or purchased by your organization in the reporting period

Credit origination or credit purchase	Project type	Project identification	Verified to which standard	Number of credits (metric tonnes of CO2e)	Number of credits (metric tonnes CO2e): Risk adjusted volume	Credits cancelled	Purpose, e.g. compliance
Credit origination	Energy efficiency: industry	IN0707 India: FaL-G Brick Units in Micro Sector-PDD 1	CDM (Clean Development Mechanism)	576	576	Yes	Compliance
Credit origination	Energy efficiency: own generation	CN1891 China- Animal Manure Management System (AMMS) GHG Mitigation Project, Shandong Minhe Livestock Co. Ltd., Penglai, Shandong Province, P.R. of China	CDM (Clean Development Mechanism)	1635	1635	Yes	Compliance
Credit origination	Biomass energy	CN2221 China- Hubei Eco-Farming Biogas Project Phase I – Project	CDM (Clean Development Mechanism)	1123	1123	Yes	Compliance
Credit origination	Biomass energy	NP0136 Nepal: Biogas Support Program	CDM (Clean Development Mechanism)	292	292	Yes	Compliance
Credit origination	Biomass energy	NP0139 Nepal: Biogas Support Program	CDM (Clean Development Mechanism)	490	490	Yes	Compliance
Credit origination	Energy efficiency: industry	BD5125 Improving Kiln Efficiency in the Brick Making Industry in Bangladesh	CDM (Clean Development Mechanism)	698	698	Yes	Compliance
Credit origination	Biomass energy	NP5415 Biogas Support Program - Nepal Activity-3	CDM (Clean Development Mechanism)	727	727	Yes	Compliance
Credit origination	Biomass energy	NP5416 Biogas Support Program - Nepal Activity- 4	CDM (Clean Development Mechanism)	741	741	Yes	Compliance
Credit origination	Energy efficiency: industry	IN4831 India-FaL-G Brick and Blocks Project No.3	CDM (Clean Development Mechanism)	331	331	Yes	Compliance
Credit origination	Energy efficiency: own	PK1713 Community-Based Renewable Energy Development in the Northern Areas and Chitral	CDM (Clean Development	408	408	Yes	Compliance

Credit origination or credit purchase	Project type	Project identification	Verified to which standard	Number of credits (metric tonnes of CO2e)	Number of credits (metric tonnes CO2e): Risk adjusted volume	Credits cancelled	Purpose, e.g. compliance
	generation	(NAC), Pakistan	Mechanism)				
Credit origination	Hydro	KE7783 Optimisation of Kiambere Hydro Power Project	CDM (Clean Development Mechanism)	198	198	Yes	Compliance
Credit origination	Energy efficiency: own generation	KE3773 Olkaria II Geothermal Expansion Project	CDM (Clean Development Mechanism)	1499	1499	Yes	Compliance
Credit origination	Hydro	CN904 Guangrun Hydropower Project in Hubei Province, P.R. China	CDM (Clean Development Mechanism)	824	824	Yes	Compliance
Credit origination	Hydro	KE5023 Redevelopment of Tana Hydro Power Station Project	CDM (Clean Development Mechanism)	356	356	Yes	Compliance
Credit origination	Other: Energy efficiency	BD2765 Installation of Solar Home Systems in Bangladesh	CDM (Clean Development Mechanism)	357	357	Yes	Compliance
Credit origination	Other: Energy efficiency	UG2956 Uganda Municipal Waste Compost Programme	CDM (Clean Development Mechanism)	322	322	Yes	Compliance
Credit origination	Hydro	NP3653 Micro-hydro Promotion	CDM (Clean Development Mechanism)	1290	1290	Yes	Compliance
Credit origination	Biomass energy	MD160 Moldova Biomass Heating in Rural Communities	CDM (Clean Development Mechanism)	460	460	Yes	Compliance
Credit origination	Energy efficiency: industry	MD173 Energy efficiency and fuel switching measures for buildings	CDM (Clean Development Mechanism)	651	651	Yes	Compliance
Credit	Biomass	MD159 Moldova Biomass Heating in Rural	CDM (Clean	589	589	Yes	Compliance

Credit origination or credit purchase	Project type	Project identification	Verified to which standard	Number of credits (metric tonnes of CO2e)	Number of credits (metric tonnes CO2e): Risk adjusted volume	Credits cancelled	Purpose, e.g. compliance
origination	energy	Communities	Development Mechanism)				
Credit origination	Energy efficiency: industry	BD6085 Improving Kiln Efficiency in the Brick Making	CDM (Clean Development Mechanism)	54	54	Yes	Compliance
Credit purchase	Hydro	CN8300 Guizhou Wujiang Siling Hydropower Project	CDM (Clean Development Mechanism)	15107	15107	Yes	Compliance

Further Information

Page: CC14. Scope 3 Emissions

CC14.1

Please account for your organization's Scope 3 emissions, disclosing and explaining any exclusions

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
Purchased goods and services	Relevant, calculated	50034000	<p>(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 publically available data sources such as PlasticsEurope, ELCD, and ecoinvent 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, AR4, 2007. (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). 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 in order to account for all procured raw materials and precursors. For calculating the emissions from</p>	0.00%	

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
			<p>packaging, we first determined the material compositions of the different packaging groups such as HDPE drums 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. Technical goods were assessed in most instances by calculating material values based on the monetary purchasing volume and determining material quantities based on price. Subsequently, we calculated GHG emissions by multiplying the total amount of the various materials by their respective cradle-to-gate emission factors. Services were assessed by their monetary purchasing volume. 5% of this volume was calculated as consumption of fuel oil. The corresponding GHG emissions were calculated by multiplying the total amount of fuel oil by its cradle-to-gate emission factor.</p>		
Capital goods	Relevant, calculated	2173000	<p>(i) Activity data: Monetary purchasing volumes of capital goods purchased in the reporting year were obtained from BASF internal business data management systems. The proportions of material costs in the purchase prices of technical equipment were derived from the German Federal Statistical Office. MEPS carbon steel and world stainless steel prices for 2015 were taken from www.meps.co.uk. (ii) Emissions factors: The cradle-to-gate emissions factors were obtained from commercially and publically available data sources such as ecoinvent</p>	0.00%	

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
			<p>or ELCD. (iii) GWP values: GWP values referring to the time horizon of 100 years were taken from IPCC, AR4, 2007. (iv) Methodology & assumptions: The GHG emissions that are associated with BASF's capital equipment purchased in 2015 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 turn-key projects, machinery, fabricated equipment etc. were analyzed based on their monetary purchasing volume in 2015. Material values were calculated from the monetary purchasing volume and the share of material costs in total purchasing price. The proportion of material costs in the purchase prices of pumps, apparatus, vessels and other technical equipment were derived from the German Federal Statistical Office and from in-house estimates. It was assumed that material costs refer to the costs associated with the purchase of steel and concrete. The share of two commonly used steel grades of the total amount of steel was investigated in a large-scale project. The resulting proportion of carbon steel to stainless steel was then used for calculating the amount of steel. The corresponding GHG emissions were then calculated by multiplying the total amount of carbon and stainless steel as well as concrete by their respective cradle-to-gate emission factors.</p>		
Fuel-and-energy-	Relevant,	2429000	(i) Activity data: The quantities of fuel and energy	0.00%	

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
related activities (not included in Scope 1 or 2)	calculated		<p>(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 ELCD database. The grid-related loss factor was taken from the German Federal Statistical Office. (iii) GWP values: GWP values referring to the time horizon of 100 years were taken from IPCC, AR4, 2007. (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 cradle-to-gate CO2-e 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 2015 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 (87% 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, 2015). The fuel shares were then multiplied by the respective CO2-e emission factors to result in the overall CO2-e emissions. Generation of electricity, steam, heating and cooling that is</p>		

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
			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 for 2015 and a grid-related loss factor of 7 percent for Germany. Losses associated with our own T&D system due to our own generation of electricity and steam are already accounted for in our Scope 1 emissions which are based on fuel input. Generation of electricity and steam that is purchased by the reporting company and sold to end users is not applicable to BASF.		
Upstream transportation and distribution	Relevant, calculated	2093000	(i) Activity data: Quantities and types of goods procured in 2015 were obtained from BASF internal business data management 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 trucks in Asia, a higher CO2 emission factor than for Europe was assumed. (iii) GWP values: GWP values referring to the time horizon of 100 years were taken from IPCC, AR4, 2007. (iv) Methodology & assumptions: For the calculation of the GHG emissions associated with the transportation of all procured products to BASF sites three different categories of procured products were defined: a) raw materials and naphtha, b) natural gas and industrial gases and c) technical & capital goods and packaging. a) The GHG emissions associated with the transportation of raw	0.00%	

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
			<p>materials and naphtha 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 included road, ocean-going vessel, barge, rail and air. In all other regions solely transportation by truck was assumed. The transportation distance in each region was estimated by logistics experts. b) Emissions from the transportation of natural gas and industrial gases were calculated by multiplying the quantity of the product purchased by an emission factor for pipeline and a transportation distance. The distance for the transportation of industrial gases was assumed to be 0.5 km since most of the gases are produced on-site. The distance for the transportation of natural gas was assumed to be 1000 km. c) The GHG emissions that are associated with transportation of BASF's technical & capital goods and packaging purchased in 2015 were estimated by assuming that the transported weight of technical & capital goods is twice as much as the purchased steel quantity which was calculated as described in Category 2 (Scope 3 emissions from capital goods). Only truck transportation and an average transportation distance of 500 km (in USA 1000 km) were assumed.</p>		
Waste generated in operations	Not relevant, calculated	986000	(i) Activity data: The quantities of solid waste and waste water generated during production at all	0.00%	

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
			<p>BASF production sites were obtained from our in-house Responsible Care 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, waste water treatment and others). (ii) Emissions factors: The emissions factors were obtained from the ELCD database. (iii) GWP values: GWP values referring to the time horizon of 100 years were taken from IPCC, AR4, 2007. (iv) Methodology & assumptions: The GHG emissions from on-site waste incineration are accounted for in our Scope 1 emissions. The GHG emissions from off-site waste incineration and on- and off-site landfill were calculated as follows: 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 and assuming that all of the carbon is converted into CO2 during combustion results in the CO2 emissions from waste incineration. The GHG emissions from landfill were calculated by multiplying the amount of landfilled waste with the GHG emission factor for landfilled plastic waste. Plastic waste was chosen because it is a common inert chemical product showing average decomposition behavior for a carbon containing chemical in terms of greenhouse gases. The GHG emissions of BASF-operated wastewater plants are accounted for in our Scope 1 or Scope 2</p>		

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
			<p>emissions, respectively. The CO2-e 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 non-biodegradable 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.</p>		
Business travel	Not relevant, calculated	325000	<p>(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. (ii) Emissions factors: CO2 conversion factors for short-haul, medium-haul and long-haul flights were taken from www.carbonplanet.com. CO2 conversion factors for short and long distance travel by train and for business travel by rental car were taken from World Resources Institute (2015). GHG Protocol tool for mobile combustion. Version 2.6. (iii) GWP values: GWP values referring to the time horizon of 100 years were taken from IPCC, AR4, 2007. (iv) Methodology & assumptions: The GHG emissions associated with the transportation of all BASF Group</p>	100.00%	

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
			<p>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 short-haul, medium-haul and long-haul flights. b) GHG emissions from business travel by train: Rail miles that are collected through external partners such as Deutsche Bahn or travel agencies and monitored by our Travel Management were converted into CO2 emissions, using an average CO2 conversion factor for long and short distance travel by train. c) GHG emissions from business travel by car: Driven kilometers that are collected by car rental companies and monitored by BASF's Travel Management were converted into CO2 emissions using an average passenger car CO2 conversion factor deducted from the GHG Protocol tool for mobile combustion (Version 2.6).</p>		
Employee commuting	Not relevant, calculated	275000	<p>(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 2009. (ii) Emissions factors: The CO2 emissions factors used were taken from World Resources Institute (2015). GHG Protocol tool for mobile combustion. Version 2.6. (iii) GWP values: GWP values referring to the time horizon of 100 years were taken from IPCC, AR4, 2007. (iv)</p>	0.00%	

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
			<p>Methodology & assumptions: CO2 emissions from employee commuting in Europe were calculated based on the results of a representative poll conducted among BASF SE employees in 2009 (4,989 out of 33,812 employees). Employees were asked about the distance travelled between their homes and workplaces and their means of transportation. CO2 emissions were calculated by multiplying the travelled distance (220 days per year back and forth) with the respective CO2 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 it was assumed that all employees travel by car 238 days per year and for Asia and South America that all employees travel by car 220 days per year. The corresponding emissions were calculated by multiplying the distance, which was assumed to be 30 km (one-way) for the three regions, with the number of employees, number of working days and an average emission factor for cars per km.</p>		
Upstream leased assets	Not relevant, calculated	320000	(i) Activity data: Leased cars: Vehicle miles as defined in the leasing contracts for BASF SE employees for 2015. Leased office and storage space: Leased office and storage space for the reporting year was obtained from BASF internal business data management systems. Leased equipment: The monetary purchasing volume for	0.00%	

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
			<p>leased equipment in 2015 was derived from BASF internal business data management systems. (ii) Emissions factors: The CO2 emissions factors for the leased cars were provided by the car manufacturers. They differentiate between fuel type (diesel/gasoline) as well as cubic capacity. The energy consumption per square meter of office space in Europe and South America was taken from www.lfu.bayern.de. For Asia and North America it was taken from a study of the WBCSD. CO2 emissions factors per MWh were obtained from the International Energy Agency (IEA, 2013). Leased Equipment: The emissions factors for hardware were taken from ADEME Bilan Carbon 5.0 (France). (iii) GWP values: GWP values referring to the time horizon of 100 years were taken from IPCC, AR4, 2007. (iv) Methodology & assumptions: GHG emissions from leased assets were calculated for three different categories. a) 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. b) The GHG emissions from leased offices and storage space were assessed based on the leased space and the annual energy consumption per square meter of</p>		

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
			office and storage space, respectively. No distinction was made between office and storage space. c) The GHG emissions from leased equipment such as hardware (i.e. computers or printers) were assessed based on the monetary purchasing volume in 2015 and CO2 emission factors for hardware.		
Downstream transportation and distribution	Relevant, calculated	1693000	(i) Activity data: Quantities and types of products sold in 2015 as well as their means of transportation were obtained from BASF internal business data management systems. (ii) Emissions factors: The CO2 emission factors used (except pipeline transport) are specific factors calculated for BASF's outbound transport activities; for pipeline transport the CO2 emission factor was taken from the McKinnon Report "Measuring and Managing CO2 Emissions from the Transport of Chemicals in Europe". For trucks in Asia, a higher CO2 emissions factor than for Europe was assumed. (iii) GWP values: GWP values referring to the time horizon of 100 years were taken from IPCC, AR4, 2007. (iv) Methodology & assumptions: For the calculation of the GHG emissions associated with the transport of BASF products sold in 2015, the respective shipments from BASF sites to BASF customers were evaluated taking into account regional differences. The transport distances from each Verbund site and in the different regions Europe, North America, South America and Asia were	0.00%	

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
			determined by internal experts. The GHG emissions associated with the transport of BASF's sold products were calculated by multiplying product quantity by the relevant transport distance and by the respective CO2 emissions factor.		
Processing of sold products	Not relevant, explanation provided				<p>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 of and balancing 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</p>

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
					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	Relevant, calculated	42710000	(i) Activity data: Quantities and types of products sold in 2015 were obtained from BASF internal business data management systems. (ii) Emissions factors: The CO2 emissions factor for crude oil was taken from IPCC. The CO2 emissions factor for natural gas was calculated on the basis that natural gas is solely methane that is entirely converted into CO2. (iii) GWP values: GWPs were mainly taken from IPCC, AR4, 2007. Only the GWPs of some fluorinated hydrocarbons are manufacturers' information. (iv) Methodology & assumptions: For the calculation of the GHG emissions associated with the use of sold BASF products we only considered the direct use-phase emissions of sold products over their expected lifetime, i.e. the emissions that occur from the use of fuels and feedstock, and GHGs and products that contain or form GHGs that are emitted during use. 1) Oil & Gas: It was assumed that 100% of the oil and gas are combusted for heating purposes. The volume of sold crude oil and natural gas, respectively, was multiplied by the CO2 emissions factor for crude oil and natural gas, respectively, to calculate the GHG emissions associated with the thermal conversion of these products. 2) GHG emissions from products	0.00%	

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
			<p>sold in 2015 that form greenhouse gases: Nitrogenous fertilizers release nitrous oxide to the atmosphere as a result of microbial action in the soil. The associated GHG emissions were calculated based on the amount of N-containing fertilizers sold in 2015, the nitrogen content and on the fact that about 1% (in the presence of a nitrification inhibitor only 0.5%) of the nitrogen contained in the fertilizer is converted into N₂O-N. CO₂ from the use of urea (as fertilizer and solution for diesel truck engines) was calculated based on the sold product quantity and the contained CO₂ amount. 3) GHG emissions from products sold in 2015 that contain greenhouse gases such as dry ice, CO₂ as gas for the beverage industry and HFCs as foaming agents for the production of 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 the loss rate of HFCs in the polyurethane foams during their use phase (35 % for spray foam and 100% for integral foam).</p>		
End of life treatment of sold products	Relevant, calculated	17609000	(i) Activity data: Quantity of the products (raw materials, pre-products and packaging) purchased in 2015 and percentage of BASF's sales in Europe and in the other regions was obtained from BASF internal business data management systems. The ratio of the different waste disposal methods	0.00%	

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
			<p>(incineration versus landfill) in each country/region was deducted from data on municipal waste treatment provided by the United Nations Statistics Division and by Eurostat. (ii) Emissions factors: The emissions factor for landfill was obtained from the ELCD database. (iii) GWP values: GWP values referring to the time horizon of 100 years were taken from IPCC, AR4, 2007. (iv) Methodology & assumptions: GHG emissions from the disposal of all BASF products (except the products that are already disposed of during their use phase and accounted for in the respective category) manufactured in 2015 were calculated presuming that all BASF products are disposed of at the end of their lives either by landfilling or by incineration. It was assumed that the products would be used and disposed of in the countries to which BASF sold them. The amount of CO2 emissions was calculated separately for incineration and landfill for each region, taking into account the region-specific proportions of the different disposal methods. The same range of chemicals as in Category 1 was considered for end-of-life options. The amount of CO2 a compound emits when incinerated can be determined by its C-content. Therefore the CO2 emissions for all products incinerated were calculated by multiplying CO2 emissions per kg by the amount of pre-product. Incineration with energy recovery was considered proportionately in Europe and Asia. In accordance with the Guidance for</p>		

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
			Accounting & Reporting Corporate GHG Emissions in the Chemical Sector Value Chain, the total emissions from incineration with energy recovery was allocated to the waste treatment and the energy generation with a zero emission factor by using an economic allocation approach based on the proportions of total costs of waste treatment and total revenues from the sale of generated steam. For the fraction of C-containing products disposed of in landfills, an emission factor for plastic waste was selected. Again, this factor was multiplied by the landfill fraction of the amount of product procured to obtain the CO2-e emissions of products landfilled.		
Downstream leased assets	Not relevant, calculated	100000	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 CO2-e.	0.00%	
Franchises	Not relevant, explanation provided				Not relevant as BASF does not own or operate franchises.
Investments	Relevant, calculated	2083000	(i) Activity data: Scope 1 and scope 2 emissions of BASF's subsidiaries, associated companies and joint ventures 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, AR4, 2007. (iii) Methodology & assumptions: GHG emissions from equity-accounted joint ventures and equity-accounted	100.00%	

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
			associated companies as well as from subsidiaries and associated companies that are not financially consolidated due to immateriality are not included in BASF's scope 1 or scope 2 emissions. However, the GHG emissions from these companies are determined on a regular basis by inquiring these data from the respective companies. GHG emissions were calculated based on BASF's equity share in these companies, but only from non-consolidated companies of which BASF holds a minimum interest of 20%.		
Other (upstream)					
Other (downstream)					

CC14.2

Please indicate the verification/assurance status that applies to your reported Scope 3 emissions

Third party verification or assurance process in place

CC14.2a

Please provide further details of the verification/assurance undertaken, and attach the relevant statements

Verification or assurance cycle in place	Status in the current reporting year	Type of verification or assurance	Attach the statement	Page/Section reference	Relevant standard	Proportion of reported Scope 3 emissions verified (%)
Annual process	Complete	Limited assurance	https://www.cdp.net/sites/2016/16/1516/Climate Change 2016/Shared Documents/Attachments/CC14.2a/BASF15_CDP Verification KPMG_final.pdf	1-7	ISAE3000	100
Annual process	Complete	Limited assurance	https://www.cdp.net/sites/2016/16/1516/Climate Change 2016/Shared Documents/Attachments/CC14.2a/BASF15_CDP Verification KPMG_final.pdf	1-7	ISAE 3410	100

CC14.3

Are you able to compare your Scope 3 emissions for the reporting year with those for the previous year for any sources?

Yes

CC14.3a

Please identify the reasons for any change in your Scope 3 emissions and for each of them specify how your emissions compare to the previous year

Sources of Scope 3 emissions	Reason for change	Emissions value (percentage)	Direction of change	Comment
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Sources of Scope 3 emissions	Reason for change	Emissions value (percentage)	Direction of change	Comment
Purchased goods & services	Emissions reduction activities	0.4	Decrease	In 2015, we have initiated and implemented more than 160 projects that lead to a reduction of raw material demand for our operations. The lower demand helps to avoid emissions resulting from the production of these raw materials. For example, we improved the distillation column control concept in a production plant leading to increased distillation yield. In another plant, we improved the extraction process in an agitated extraction column saving significant amounts of the washing agent. Recycling of gaseous raw material was enabled by installing a compressor instead of destroying the unreacted amount in a washing tower. In a solid production process the product is sieved to separate a fines fraction which was dumped. By modification of the separation process the fines fraction can be recycled to the reactor to reduce the raw material amount needed. By adjustment of the pH value, the recycling of unreacted raw material from a waste water stream could be improved.
Purchased goods & services	Change in output	2.4	Decrease	The decrease in GHG emissions in this category is attributable to the fact that less raw materials, precursors, technical equipment and packaging materials were purchased in 2015 than in 2014.
Capital goods	Change in output	8.5	Decrease	The decrease in GHG emissions in this category is linked to a reduced amount of capital goods purchased in 2015 compared to 2014. The purchase of capital goods as well as the number of capital projects always fluctuate from year to year.
Fuel- and energy-related activities (not included in Scopes 1 or 2)	Emissions reduction activities	3.0	Decrease	In 2015, we were able to further optimize the resource and energy consumption of our production in numerous projects around the world. At the Ludwigshafen site, for example, we implemented an integrated steam network between the ethanolamine facility and the Ultrason® plant, making use of significant use of heat. In total, these activities have led to steam and electricity savings in 2015 compared to 2014 with the result that less fuel and energy (electricity and steam) had to be purchased in 2015.
Upstream transportation & distribution	Change in output	8.9	Decrease	The decrease in GHG emissions in this category is linked to the fact that less goods were purchased in 2015, which had to be transported to our premises.
Business travel	Change in methodology	7.3	Increase	The increase in GHG emissions in this category is due to a change in the emissions factors that were used to assess BASF's business travel by car.
Upstream leased assets	Change in output	23.9	Increase	The increase in GHG emissions in this Scope 3 category is linked to the fact that more technical equipment was leased in 2015 than in the year before.
Use of sold products	Change in boundary	18.4	Decrease	In 2015, a lower quantity of natural gas produced by our Oil & Gas segment Wintershall had to be considered due to a change in boundary. Hence, less GHG emissions were

Sources of Scope 3 emissions	Reason for change	Emissions value (percentage)	Direction of change	Comment
				produced from burning the respective amounts for heating purposes, leading to a decrease in GHG emissions in this category compared to the previous year.
End-of-life treatment of sold products	Emissions reduction activities	2.6	Decrease	In 2015, BASF increased the share of raw materials from renewable resources purchased to 5.8% from 4.5% in 2014. Responsible resource management is an integral part of BASF's strategy, globally applied through the Verbund concept, innovative products, and the use of renewable raw materials. Hence the GHG emissions from end-of-life treatment of products sold to customers decreased in the reporting year due to a higher share of biogenic carbon, which was accounted for with a zero emission factor (in this category as well as in category 1 of Scope 3 emissions).
Investments	Change in boundary	10.4	Increase	In 2015, we have considered the GHG emissions from additional equity-accounted joint ventures in this category for the first time.

CC14.4

Do you engage with any of the elements of your value chain on GHG emissions and climate change strategies? (Tick all that apply)

- Yes, our suppliers
- Yes, our customers

CC14.4a

Please give details of methods of engagement, your strategy for prioritizing engagement and measures of success

The basis of BASF's climate protection activities is comprehensive emissions control, for which we conduct two separate analyses on a yearly basis:

- We determine which products in our portfolio contribute towards reducing GHG emissions.
- We determine how many emissions are produced along the entire BASF value chain, from the supply of raw materials, goods and services via our own production and the use of the end products we produce through to disposal of all our products at the end of their life. The analysis adheres to the GHG Protocol standards. BASF has published this comprehensive corporate carbon footprint (CCF) since 2008. The annually updated balance gives us pointers on where the influencing factors for preventing GHG emissions are, and we can then check whether we are on the right track for meeting our goals to reduce GHG emissions.

Engagement with our suppliers:

As a result of our CCF, we are well aware of the GHG emissions from our supply chains. We estimated that about 54 million tons of GHG emissions are linked to the raw materials, goods and services that we purchased in 2015, more than twice as much as our Scope 1&2 emissions in the same year. The largest amount of these GHG emissions is related to the raw materials and precursors that we buy. With our sustainability-oriented supply chain management, we contribute to risk management by raising our suppliers' awareness of our expectations and standards.

We count on reliable supply relationships and want to make our suppliers' contribution to sustainable development transparent. GHG emissions and climate change topics are – just like other environmental, social or corporate governance topics – embedded here and addressed wherever appropriate.

BASF is a founding member of the Together for Sustainability (TfS) initiative of leading chemical companies for the global standardization of supplier evaluations and auditing. This initiative aims to develop and implement a global program for the responsible supply of goods and services and improve suppliers' environmental and social standards. Based on TfS evaluations, we pursue a risk-oriented approach with clearly defined, BASF-specific follow-up processes. We have developed risk matrices that help us identify suppliers with a high sustainability risk. We use EcoVadis assessments and TfS audits to obtain pertinent information on their emission performance.

In 2015, the initiative's members conducted a total of 2580 sustainability assessments and 179 ESG audits.

Engagement with our customers:

For the 2015 business year, BASF conducted sustainability assessments and ratings for 95.4% of its entire portfolio of more than 60,000 specific product applications – which account for €64.9 billion in sales – using the Sustainable Solution Steering® method. This externally validated procedure allows us to determine how our products contribute to sustainability, in which products with a substantial sustainability contribution in the value chain are classified as Accelerators. The products that help to reduce GHG emissions or increase energy efficiency in this context are dubbed Accelerators “Climate Change & Energy” and reflect our wide portfolio of climate protection products.

An analysis of 25 climate protection product groups revealed that customers' use of products sold in 2015 helped to avoid 530 million metric tons of CO₂ equivalents. Every product makes an individual contribution in the value chain of customer solutions. Value chains are assessed in terms of BASF's economic share of the respective customer solution. On average, 11% of the emissions avoided were attributable to BASF in 2015. The calculation of avoided greenhouse gas emissions was based on the chemical industry standard of the International Council of Chemical Associations (ICCA) and the World Business Council for Sustainable Development (WBCSD).

The portfolio segmentation through the Sustainable Solution Steering® method is a strong tool to prioritize and be more specific about the contribution of BASF products to sustainability. We want to increase the proportion of Accelerator products in the long term, and we have therefore set ourselves a concrete goal in 2015: By 2020, we aim to raise the proportion of sales from Accelerator products to 28% (status 2015: 26.6%). To this end we are backing our competence in R&D and engage with our customers in many different ways such a customer workshops, customer brochures, seminars or by use of media in order to market and increasingly sell these products.

CC14.4b

To give a sense of scale of this engagement, please give the number of suppliers with whom you are engaging and the proportion of your total spend that they represent

Number of suppliers	% of total spend (direct and indirect)	Comment
3200	19%	<p>There are many ways in which we engage with our suppliers. The scale of engagement depends on the mode of cooperation: i) Our Conditions of Purchase include a reference to our expectations and requirements with regard to environmental, social and governance standards. +++ ii) We queried about 1500 suppliers on their commitment to the values of our “Supplier Code of Conduct” in 2015. Furthermore, our buyers are encouraged to incorporate BASF’s “Supplier Code of Conduct” into their communications with suppliers for example in strategic supplier dialogues or in regular supplier meetings. +++ iii) In the scope of the Chemical Initiative “Together for Sustainability” (TfS) we engage with various suppliers. As part of this initiative we have committed to partner with many of our suppliers and other stakeholders and engage in capacity building to advance sustainable development and strive for continuous improvements in our supply chain.+++ iv) We provided training to suppliers with an elevated sustainability risk. Therefore, we initiated cooperation in China and Brazil to instruct suppliers on sustainability standards. We have developed a training program together with the East China University of Science and Technology in Shanghai and Espaco ECO Foundation in Brazil. Furthermore, BASF raises awareness about sustainability topics in supplier days. A supplier day which was held by the TfS initiative took place in Sao Paulo/Brazil in June 2015. TfS also held a joint conference in Shanghai/China with the China Petroleum and Chemical Industry Federation (CPCIF) with the goal of enhancing mutual understanding of the challenges associated with sustainability. +++ The number of suppliers given in the left column reflects our overall engagement through the various abovementioned activities. The percentage of total spend indicates the number of how many high risk suppliers have been assessed in 2015.</p>

CC14.4c

If you have data on your suppliers’ GHG emissions and climate change strategies, please explain how you make use of that data

How you make use of the data	Please give details
Identifying GHG sources to prioritize for reduction actions	The GHG emissions that are associated with the raw materials, goods and services from our suppliers are annually evaluated and assessed within the scope of our corporate carbon footprint.
Use in supplier scorecards	The assessment of the sustainability performance of our suppliers is an integral part of our procurement sustainability risk management process. If needed, our suppliers’ sustainability performance is monitored to protect BASF’s reputation and reduce business risks from suppliers. For further information, please see https://www.basf.com/en/company/sustainability.html
Other	Although BASF has numerous suppliers, only a limited number of large suppliers (< 2% of total amount) accounts for approx. 80% of our raw material procurement. Most of these companies are well-known energy or upstream petrochemical companies that supply BASF with the building blocks for the chemical industry. A large majority of these companies have a well-recognized sustainability and climate strategy, greenhouse gas emission targets and have responded to the CDP questionnaire. We use this information for managing

How you make use of the data	Please give details
	general risks such as reputational risks.

CC14.4d

Please explain why you do not engage with any elements of your value chain on GHG emissions and climate change strategies, and any plans you have to develop an engagement strategy in the future

Further Information

Module: Sign Off

Page: CC15. Sign Off

CC15.1

Please provide the following information for the person that has signed off (approved) your CDP climate change response

Name	Job title	Corresponding job category
Margret Suckale	Member of the Board of Executive Directors, responsibilities: Engineering&Maintenance, EHS, European Site&Verbund Management, Human Resources, Industrial Relations Director, Site Director Ludwigshafen	Board/Executive board

Further Information

CDP