We create chemistry for a sustainable future

BASF SRI Story
June 2019
Cautionary note regarding forward-looking statements

This presentation contains forward-looking statements. These statements are based on current estimates and projections of the Board of Executive Directors and currently available information. Forward-looking statements are not guarantees of the future developments and results outlined therein. These are dependent on a number of factors; they involve various risks and uncertainties; and they are based on assumptions that may not prove to be accurate. Such risk factors include those discussed in Opportunities and Risks on pages 123 to 130 of the BASF Report 2018. BASF does not assume any obligation to update the forward-looking statements contained in this presentation above and beyond the legal requirements.
Sustainable development
Ensuring business success tomorrow by creating value for the environment, society and BASF

- We have defined sustainability focus areas in our corporate strategy to meet the growing challenges along the value chain:
  - We source responsibly
  - We produce safely for people and the environment
  - We produce efficiently
  - We value people and treat them with respect
  - We drive sustainable products and solutions

- Our products, solutions and technologies contribute to achieving the United Nations’ Sustainable Development Goals (SDGs), living up to our company purpose “We create chemistry for a sustainable future”

- Relevant topics resulting from these commitments – such as energy and climate protection, portfolio management, supply chain responsibility, employee engagement, resource efficiency, responsible production and water – form the focal points of our reporting
Our ambitious financial and non-financial targets

Financial targets

- Grow sales volumes faster than global chemical production every year
- Increase EBITDA before special items by 3% to 5% per year
- Achieve a return on capital employed (ROCE)\(^1\) considerably above the cost of capital percentage every year
- Increase the dividend per share every year based on a strong free cash flow

Nonfinancial targets

- Grow CO\(_2\)-neutrally until 2030
- Achieve €22 billion in Accelerator sales\(^2\) by 2025
- Cover 90% of our relevant spend\(^3\) with sustainability evaluations by 2025, and have 80% of our suppliers improve their sustainability performance upon re-evaluation
- More than 80% of our employees feel that at BASF, they can thrive and perform at their best

Existing nonfinancial targets

- Reduce the worldwide lost-time injury rate per 200,000 working hours to ≤0.1 by 2025
- Reduce worldwide process safety incidents per 200,000 working hours to ≤0.1 by 2025
- Introduce sustainable water management at all production sites in water stress areas and at all Verbund sites by 2030
- Increase the proportion of women in leadership positions with disciplinary responsibility to 22–24% by 2021

\(^{1}\) Return on capital employed (ROCE) is a measure of the profitability of our operations. We calculate this indicator as the EBIT generated by the operating divisions as a percentage of the average cost of capital basis.

\(^{2}\) Accelerator products are products that make a substantial sustainability contribution in the value chain.

\(^{3}\) We understand relevant spend as procurement volumes with relevant suppliers.
Resource efficiency
BASF is committed to climate protection

- BASF is committed to contributing to the Paris climate agreement
- Climate change and global warming are among the most pressing challenges of our time
- BASF uses carbon raw materials responsibly: 75% of carbon converted to products, 25% consumed for process energy and converted to CO₂¹
- 22 million tons of CO₂ emissions by BASF worldwide in 2018 compared to 10–30 million tons per year for one coal-fired power plant
- Customers’ use of BASF’s climate protection products sold in 2018 avoided 640 million tons of CO₂ equivalents (thereof 5% attributable to BASF)²
- European emissions trading benchmarks show that our chemical plants operate at above-average energy efficiency

¹ BASF carbon mass balance calculation (2018, non-audited, without Oil & Gas)
² Based on the chemical industry standard of the International Council of Chemical Associations and the World Business Council for Sustainable Development
Verbund – unique competitive advantage
Actively managed in line with market requirements

Geismar

Freeport

Combined heat and power plants and integrated energy Verbund prevented 6.3 million tons of CO₂ emissions in 2018

Antwerp

Synergies in logistics and infrastructure, minimization of waste

Ludwigshafen

>€1 billion of cost savings per year
CO₂-neutral growth until 2030
Creating value to society and contributing to a sustainable development

- Since 1990, we have doubled our production volumes and nevertheless cut our greenhouse gas emissions in halves
- We will grow our production volumes without adding further CO₂ emissions¹ until 2030
- Carbon intensity to be reduced by 30%
- We support the recommendations of the Task Force for Climate-related Financial Disclosure (TCFD)

¹ BASF operations excluding the discontinued oil and gas business; includes other greenhouse gases according to the Greenhouse Gas Protocol, which are converted into CO₂ equivalents
Key measures to implement CO$_2$-neutral growth

Global carbon management

GHG emissions (million tons CO$_2$ equivalents), scope 1 and 2

- Carbon intensity to be reduced by 30%
- To achieve this, we establish a global carbon management that involves
  - further improvements of energy and process efficiency
  - continued operational excellence measures
  - shifting our energy mix towards renewable energies
  - portfolio development
  - a research program to develop breakthrough technologies for those basic chemicals which are most energy consuming

1 Greenhouse gas emissions of BASF portfolio 2018, including the discontinued oil and gas business; baseline for the new goal (excluding the oil and gas business) to be published separately in 2019
2 Accounting for more than half of the CO$_2$ emissions of the chemical industry in Europe
BASF’s Carbon Management – our focus

Potential CO₂ reduction

- Shift power supply towards renewable energies
- Further improve process and energy efficiency
- Develop CO₂-reduced breakthrough technologies

powered by BASF’s unique catalyst platform

Costs and risks
E-Furnace: new technology for clean high-temperature reactions

- Switch cracker coil heating from natural gas to electrical resistance heating, combining high current with low voltage
- Integrate an E-Furnace into the steam cracker in Ludwigshafen
- Redesign of the entire furnace required, from the alloy composition to electric connectors and transformers
- BASF aims to develop the world’s first electrical heating concept for steam crackers within the next five years

1 Government funding will be necessary due to high technological and commercial risk
Methane pyrolysis: new process for clean hydrogen

- Decompose methane (CH₄) into hydrogen and solid carbon via thermal pyrolysis avoiding CO₂ as byproduct
- Design a moving carbon bed reactor that combines chemical reaction and heat integration
- BASF is developing a completely new reactor design for the pyrolysis of methane into hydrogen and solid carbon¹

¹ Government funding will be necessary due to high technological and commercial risk
We source responsibly
Extend sustainability evaluations and improve sustainability performance in the supply chain

- New goal: Cover 90% of our relevant spend\(^1\) with sustainability evaluations by 2025, and have 80% of our suppliers improve their sustainability performance upon re-evaluation

- Supplier Code of Conduct rooted in internationally recognized standards such as the principles of the UN Global Compact and the International Labor Organization

- Engaged in more than 20 initiatives to improve sustainability performance and working conditions in the supply chain, e.g., Global Battery Alliance (GBA), Responsible Cobalt Initiative (RCI), Roundtable on Sustainable Palm Oil (RSPO)

- Founding member of the “Together for Sustainability” initiative for the joint evaluation of suppliers; 3,767 sustainability assessments and 358 audits carried out by member companies in 2018, thereof 546 assessments and 100 audits by BASF

\(^1\) We understand relevant spend as procurement volumes with relevant suppliers
Global water stewardship
Strong commitment to local water management

- Further increase of water stress areas expected worldwide (climate change, population growth and economic development)
- Growing competition among water users expected (e.g., households, agriculture, industry)
- In 2018, BASF was again awarded with an “A−” leadership grade for sustainable water management from CDP
- New goal: Introduction of sustainable water management at all Verbund sites and sites in water stress areas\(^1\) by 2030

\(^1\) Representing 93% of BASF’s entire water abstraction
**Engaged employees**

“I am a proud ambassador for what BASF stands for”

- BASF’s employees and their engagement are key to enable our long-term business success

- Our new annual goal: More than 80% of our employees feel that at BASF, they can thrive and perform at their best
  - In our last Global Employee Survey (2015), 73% of the participants indicated a high engagement
  - In a brief Global Pulse Check 2018 (not comparable to survey of 2015), 83% of participants indicated high engagement

- To measure the engagement, we will
  - Collect regular feedback of our employees as of 2019
  - Engage our employees in discussions on the results
  - Identify improvement areas and drive follow-up activities
  - Report on the current status in the BASF Report
We create chemistry for a sustainable future

Overview on sustainability goals and KPIs

<table>
<thead>
<tr>
<th>Procurement</th>
<th>New 2025</th>
<th>Old 2020</th>
<th>Status 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sustainability assessment of relevant¹ supply</td>
<td>90%²</td>
<td>70%³</td>
<td>60%³</td>
</tr>
<tr>
<td>Suppliers with improved performance upon re-evaluation</td>
<td>80%</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Employees</th>
<th>Annual</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Employees feel that at BASF, they can thrive and perform at their best</td>
<td>&gt;80%</td>
<td>–</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Women in leadership positions</th>
<th>2021</th>
<th>2021</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>22–24%</td>
<td>22–24%</td>
<td>21.7%</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Production</th>
<th>2025</th>
<th>2025</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Process safety incidents⁴</td>
<td>≤0.1</td>
<td>≤0.1</td>
<td>0.3</td>
</tr>
<tr>
<td>Lost-time injury rate⁴</td>
<td>≤0.1</td>
<td>≤0.1</td>
<td>0.3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Product stewardship</th>
<th>Annual</th>
<th>2020</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk assessment of products</td>
<td>Always comply</td>
<td>&gt;99%</td>
<td>91%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Energy &amp; climate protection</th>
<th>New 2030</th>
<th>Old 2020</th>
<th>Status 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Absolute emissions of CO₂ equivalents⁵</td>
<td>Constant</td>
<td>–</td>
<td>22⁶</td>
</tr>
<tr>
<td>Specific emissions⁷ of CO₂ equivalents</td>
<td>Further improvement</td>
<td>–40%⁸</td>
<td>–34.2%⁸</td>
</tr>
<tr>
<td>Introduction of ISO 50001 energy management system⁹</td>
<td>90%</td>
<td>90%</td>
<td>73%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Water</th>
<th>2030</th>
<th>2025</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sustainable water management at Verbund sites and sites in water stress areas</td>
<td>100%¹⁰</td>
<td>100%</td>
<td>50%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Products &amp; solutions</th>
<th>2025</th>
<th>2020</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales generated by “Accelerators”¹¹ in product portfolio</td>
<td>€22 billion</td>
<td>28%</td>
<td>27.7%¹²</td>
</tr>
</tbody>
</table>

¹ Based on risk matrices, purchasers’ assessments and other sources
² Relevant spend
³ Relevant suppliers
⁴ Per 200,000 working hours including contractor working hours (ICCA)
⁵ Million metric tons; BASF operations excluding the discontinued oil and gas business; includes other greenhouse gases according to the Greenhouse Gas Protocol, which are converted into CO₂ equivalents
⁶ Greenhouse gas emissions of BASF portfolio 2018, including the discontinued oil and gas business; baseline for the new goal (excluding the oil and gas business) to be published separately in 2019
⁷ Per metric ton of sales products
⁸ Baseline 2002; excluding oil and gas business
⁹ At all relevant sites (primary energy demand, local energy prices)
¹⁰ Enlarged GRI definition for water stress areas
¹¹ Products with substantial contribution to sustainability
¹² Equal to €15 billion
BASF in sustainability ratings and rankings¹

CDP
As one of the world’s leading companies in reporting on climate protection and in sustainable water management, BASF has been included in the “CDP Climate A” list (2017: “A-”) and received an “A-” rating in the water category.

MSCI ESG Research
BASF achieved an “AA” rating for the sixth time in a row and ranks second in “Diversified Chemicals”.

FTSE4Good Global Index
BASF has been included again in the FTSE4Good Global Index, receiving the highest ESG rating score in the chemical industry.

¹ Assessments were carried out in 2018 referring to 2017 figures.
Sustainable Solution Steering
Leverage our innovation power to achieve €22 billion in Accelerator sales by 2025

- >60,000 product applications analyzed by 2018 (€56.2 billion in sales, 96.5% of relevant portfolio)
- 27.7% Accelerators
  - >12,000 solutions for enhanced quality of life
  - strong growth in their markets
  - on average margins ~6 percentage points above the rest of assessed portfolio
- Goal: €22 billion of sales with Accelerator products by 2025 (2018: €15 billion)
- Stronger integration in R&D pipeline, business strategies and M&A projects
- As of 2018, we will stop selling all Challenged products within maximum five years after classification
Sustainable Solution Steering
BASF’s Accelerators contribute to the UN Sustainable Development Goals

Sales shares of contributing Accelerators (%)

- Cost savings downstream: 27.7%
- Biodiversity and renewables: 4.3%
- Climate change and energy: 6.0%
- Emission reduction: 4.3%
- Resource efficiency: 15.2%
- Water: 8.5%
- Health and safety: 6.0%
- Hunger and poverty: 0.1%

(including double nominations)

Primarily addressed SDGs

- 2 DECENT WORK AND ECONOMIC GROWTH
- 3 GOOD HEALTH AND WELL-BEING
- 6 CLEAN WATER AND SANITATION
- 7 AFFORDABLE AND CLEAN ENERGY
- 8 DECENT WORK AND ECONOMIC GROWTH
- 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
- 11 SUSTAINABLE CITIES AND COMMUNITIES
- 12 RESPONSIBLE CONSUMPTION AND PRODUCTION
- 13 CLIMATE ACTION
- 15 LIFE ON LAND
Innovations for a sustainable future
Examples with significant contributions to sustainability

- **SLENTITE®** – high-performance insulation material
- **Formic acid** – runway and road deicing
- **Acronal® MB** – from biomass to dispersions
- **Cetiol® Ultimate** – emollient for personal care
- **Priaxor®** – fungicide
- **Synative® ES TMP** – sustainable marine lubricants
Electromobility

Fast-paced buildup of global cathode active materials footprint

- 2012: First CAM production facility in Elyria, Ohio
- 2018: First production volumes at Harjavalta, Finland
- 2015: Foundation of BASF TODA Battery Materials (BTBM), Japan
- 2017: Tripled capacity at BTBM in Onoda, Japan

Market projections for 2025:
- 10-15 million electric vehicles built per year
- 700-1,000 kt of CAM in electromobility
- €25-30 billion CAM market size

Chemistry of cathode active materials is key to improve energy density, lifetime and cost

Electromobility drives battery materials growth
ChemCycling
Enabling sustainable growth in a more circular economy

Waste companies supply recyclers with plastic waste

Plastic waste is converted into feedstock

The waste is collected and sorted by waste companies

Feedstock can be used to create all kinds of chemicals and products in the BASF Verbund value chains, including new plastics

Consumers and companies use and dispose of products

Customers use these chemicals to make their own products

Successful business proof in October 2018

67 million tons of global plastic packaging waste\(^1\) per year

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\(^1\) Source: Ellen MacArthur Foundation 2017
We drive sustainable solutions
Systematic sustainability performance assessments since 1996
Value-to-Society: changing the perspective
Assessing and valuing the impact of BASF’s business activities on the well-being of people

- From traditional reporting of input and output (e.g., raw materials, CO₂ emissions) to outcome and impact valuation (e.g., climate change, mitigation costs)
- Holistic view along the entire value chain
- Consistent assessment in monetary terms
- Aligned with existing standards, pragmatic approach and audited by KPMG

Positive impacts

Negative impacts
### Value-to-Society: a comprehensive assessment

Economic, social and environmental impacts in monetary terms based on a PwC model

#### Contributions to gross domestic product (value added)

<table>
<thead>
<tr>
<th>Economic Impact Categories</th>
<th>Social Impact Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net income</td>
<td>Wages</td>
</tr>
<tr>
<td>Amortization</td>
<td>Taxes</td>
</tr>
<tr>
<td>Depreciation</td>
<td></td>
</tr>
</tbody>
</table>

#### Contributions to society beyond gross domestic product

<table>
<thead>
<tr>
<th>Environmental Impact Categories</th>
<th>Social Impact Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air emissions</td>
<td>Human capital</td>
</tr>
<tr>
<td>GHG</td>
<td>Health &amp; safety</td>
</tr>
<tr>
<td>Water emissions</td>
<td>Water consumption</td>
</tr>
<tr>
<td>Land use</td>
<td>Waste</td>
</tr>
</tbody>
</table>

#### Impact categories

- Consistent application at corporate, project, and product level

#### Value chain

- Corporate level: “production cycle” – supply chain, own operations, customer industries
- Project and product level: use phase and end-of-life integrated on a case-by-case basis
BASF’s Value-to-Society 2017
Net positive contribution to sustainable growth in each step of the assessed value chain

<table>
<thead>
<tr>
<th>Full external supply chain</th>
<th>Own operations</th>
<th>Customer industries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net income</td>
<td>Value contribution from BASF procurement</td>
<td>Value contribution from BASF operations</td>
</tr>
<tr>
<td>Amortization</td>
<td>billion €</td>
<td></td>
</tr>
<tr>
<td>Taxes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wages &amp; benefits</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Human capital</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Water emissions</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 Indirect suppliers, direct suppliers  
2 Customers in industries supplied by BASF
Benefits of Value-to-Society
Complementary information to demonstrate relevance and interdependencies

Positioning
- Communication
- Reporting
- Advocacy

Progress monitoring
- Over time
- Industry benchmark
- Relevance of impacts

Decision making
- Risk exposures
- Business opportunities
- Strategy development

Value contribution at country level

Required data accuracy and granularity, maturity level of methods

Value-to-Society results 2013-2017

Alternative sites for investment project

Benefits of Value-to-Society
Complementary information to demonstrate relevance and interdependencies
Impact valuation gains momentum
It is not a question of *if*, but rather *when* impact valuation is implemented in management accounting

**Business examples**
- WBCSD Redefining Value, FReSH
- Impact Valuation Roundtable
- Embankment Project
- Increasing number of companies is piloting in all sectors
- First companies go public

**Disclosure**
- CDP (formerly Carbon Disclosure Project)
- Reporting schemes started the discussion
- The Conference Board

**Standardization**
- Natural Capital Protocol
- Social & Human Capital Protocol
- ISO 14007 and 14008
- Impact Management Project
- First uptake by EU Commission’s Sustainable Finance
We create chemistry for a sustainable future
Sustainability is a core part of our strategy and fully integrated into our management systems

- Sustainability creates growth opportunities
- We assess our contribution to a sustainable development and to the UN SDGs along the entire value chain
- BASF is committed to contributing to the Paris climate agreement – we use the resources of this planet responsibly
- Our “Value-to-Society” approach assesses and values the impact of BASF’s business activities on the well-being of people
SLENTITE®
High-performance insulation panel for construction

- PU aerogel as solid panel with best in class thermal insulation
- Flexible scope of design thanks to very slim panel (25–50% less than industry standard)
- Construction solution for reduced energy consumption
- Strong growth potential in a market of €1.3 billion
- First boards from pilot plant are being commercialized
- Start of large scale production in 2021
Formic acid
Runway and road deicing

- Better biodegradability than conventional products
- Less corrosive than conventional products, reduced impact on the surrounding flora, not hazardous to animals
- Reduced water treatment demand and costs
- Enabling ecoefficient deicing
- Key customers won: In Europe, all big airports are now using formate salts, the salt of formic acid
Acronal® MB
From biomass to dispersion for premium paints

- First BASF binder for interior paints based on the biomass balance approach launched in 2016
- Replacing fossil raw materials with renewable feedstock at the beginning of the production process
- Less greenhouse gas emissions
- Enabling interior paints that combine environmental responsibility with uncompromising premium quality
- 91% of interviewed professional painters in Germany see an increase in sustainability aspects in tenders

**BASF Verbund production steps**

<table>
<thead>
<tr>
<th>Feedstock</th>
<th>Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Renewable</td>
<td>Allocated</td>
</tr>
<tr>
<td>Fossil</td>
<td>Conventional</td>
</tr>
</tbody>
</table>
Cetiol® Ultimate
Ultra-fast spreading emollient for face/body/sun care and color cosmetics

- 100% renewable-based and volatile emollient (cosmetic ingredient used for protecting and moisturizing the skin)
- Replacement of volatile silicones and substitution of cyclomethicone possible
- Easier to use than volatile hydrocarbons
- Readily biodegradable
- Gives more flexibility in the development of natural cosmetic concepts for improved skin feel
- New formulation textures and claims
Priaxor®
Foliar fungicide for soybeans, turf and oilcrops

- Xemium®-based fungicide for foliar application
- Key component of integrated resistant management programs
- Dual mode of action, advanced disease control
- Consistent performance improves crop quality and yield
- Delivers proven benefits of AgCelence® for plant health (larger and greener leaves, stronger stems and improved tolerance to crop stress)
- Broad crop fit allows the use in minor crops, supporting small holders’ business
- Key product in BASF’s fungicide portfolio
Synative® ES TMP
Environmentally acceptable marine lubricants

- Superior lubrication performance, excellent stability
- Lower impact on the aquatic environment
- Excellent biodegradability
- Renewable content of >80%
- One of few products to enable the formulation of environmentally acceptable lubricants for marine with EU Ecolabel and OSPAR\(^1\) listing
- Key customers won; considerable growth potential, depending on future regulation

\(^1\) Oslo/Paris convention for the protection of the marine environment of the North-East Atlantic