

# STEERING BASF'S PORTFOLIO TOWARD SUSTAINABILITY

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For 150 years, BASF has been creating chemistry to find new and better solutions for its customers. Following its company purpose – “We create chemistry for a sustainable future” – BASF is focusing on chemical innovations that help customers contribute to sustainability. To meet customer needs even better in the future and to secure long-term business success, BASF has set itself the target to further increase this share of sustainable solutions. BASF has analyzed and evaluated the sustainability aspects of its entire product portfolio and established a new process for steering its portfolio based on sustainability criteria. Already in 2014, 23 percent of global sales were generated by innovative products and solutions with a significant contribution toward sustainability in its application.

## Ambition to create sustainable products

What do BASF customers need now and what will they demand in the future? Those are the questions we continually strive to answer to ensure a successful and sustainable business now and over the long term. With our broad portfolio of innovative products, we are in a position to address global megatrends. Our products and solutions contribute to conserving resources, ensuring nutrition standards, and improving quality of life. Our portfolio has always included solutions and technologies that contribute toward sustainability, such as insulation materials for buildings, lightweight plastics for fuel-saving cars, and many others. By systematically identifying key drivers for sustainability in our own industry as well as in our customer product sectors, we will further enhance this contribution. Looking for more sustainable solutions means exploring new market opportunities while minimizing risks.

Through the “We create chemistry” strategy, BASF is placing an even stronger emphasis on the contribution of its solutions to current and future sustainability

demands. Chemistry is an enabler, offering business opportunities that significantly contribute to our long-term business success.



BASF combines economic success, environmental protection, and social responsibility.

## How BASF implements sustainability

Sustainability for us is a significant driver of growth. By integrating sustainability even deeper into our decision-making processes, we optimize our business and contribute to long-term business success. We accomplish this by, for example, embedding sustainability broadly into our organization through clearly defined responsibilities and well-established communities for an exchange of best practices.

Our sustainability management has three targets: We want to identify significant topics early on, take advantage of business opportunities, and minimize risks. We are assisted in this endeavor through constant, trust-based exchanges with our stakeholders as well as through our systematic materiality analysis.

We take advantage of business opportunities by offering our customers innovative products and solutions that support their sustainability requirements. We ensure that sustainability is included in the development and implementation of our business units' strategies and research projects. Our “opportunity finding” method was developed for this purpose: It allows us to identify main sustainability drivers in relevant value chains and for our customers. This is how we aim to identify – and make targeted use of – the potential business opportunities created by sustainability.

We minimize risks by setting ourselves globally uniform standards for safety and security, environmental and health protection, product stewardship, and compliance, as well as for labor and social standards – many of which go beyond legal requirements.

In addition, we have integrated various dimensions of sustainability into our standard processes for evaluating investment decisions in property, plant, and equipment, as well as in financial assets. We prepare expert assessments of sustainability issues to support our decision-making.



For example, we use our established Eco-Efficiency Analysis tool to identify critical parameters for improving the ecological and economic balance of our products and processes along the value chain. To even better support our divisions in implementing sustainability strategies and goals, we also offer other sustainability evaluation instruments alongside the Eco-Efficiency Analysis. These include the methods often used for impact assessment as a part of lifecycle analyses.

With our AgBalance™ method, we can address specific questions to improve sustainability in agricultural production and products in the food sector. We use the information from these comprehensive evaluations to work on products and solutions together with our customers to make a contribution toward sustainable development.

Our “mass balance method” allows us to replace fossil resources in the current Production Verbund with renewable resources for nearly any product.

We have created structures to promote sustainable, entrepreneurial actions – from strategy to implementation. The Corporate Sustainability Board is BASF's central steering committee for sustainable development. It is comprised of the heads of our business, corporate, and functional units as well as of the regional units. A member of the Board of Executive Directors serves as chair. We have also established an external, independent Stakeholder Advisory Council. Its members bring an important perspective to the table in discussions with BASF's Board of Executive Directors, thereby helping us expand our strengths and identify our potential for improvement.

## How we evaluate sustainability

The demand for solutions with pronounced contributions toward sustainability is increasing. Therefore, we are continuously analyzing our complete portfolio from the viewpoint of our customers and their sustainability needs, incorporating the results into the strategies of our operating divisions, and integrating sustainability criteria into our research and development processes. We assess the sustainability contribution at an early stage of a project and adapt it if newly identified sustainability needs arise. In doing so, we contribute toward developing innovations that address sustainability megatrends, for example:

- develop smart construction solutions to help meet the housing needs of a rapidly urbanizing world;
- provide water solutions to help solve emerging water-stress issues;
- promote sustainable agriculture solutions to help feed a global population that will reach more than nine billion by 2050;
- develop battery solutions to help us achieve cleaner mobility.

To implement our sustainability strategy and manage the evaluation processes effectively, we have developed Sustainable Solution Steering, an externally validated method to gain enhanced internal transparency and consistency on the sustainability performance of more than 60,000 relevant solutions in all areas of BASF's business globally. With our approach, we evaluate value chains from cradle to grave and consider industry- as well as region-specific views in our markets. We can identify solutions that make a significant contribution within their industry sector in terms of sustainability, as well as those solutions that, at present, do not fully meet basic sustainability standards.

The key element in finding the best available solution is the balancing of economic, environmental, and social needs. As a single product in its application does not equally contribute in all three dimensions,

We have developed a third-party certified method, called Sustainable Solution Steering, to enable a comprehensive screening of all our products and to steer the portfolio accordingly. Our assessment consists of a three-stage process.



Stage One

Analysis of sustainability needs and trends in the value chains



Stage Two

Evaluation and categorization of product sustainability performance in the market application



Stage Three

Development of action plans for strategies, R&D, and market approach

it is essential to weigh the options and pursue the best solutions available.

In addition, we gain a more comprehensive and transparent understanding of our entire portfolio of solutions. Sustainable Solution Steering provides our business units with the information they need to communicate and promote the sustainability value of their products and services. This insight helps us to differentiate markets, to enter into dialogue with our customers about their sustainability needs, and hence to generate new business opportunities based on market demands.

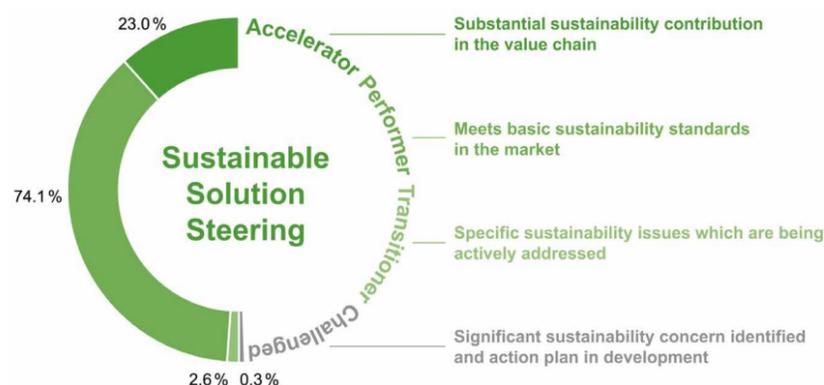
Based on the comprehensive assessment, all product applications are ranked into four categories.

- Accelerators make a substantial contribution in the value chain toward sustainability. Already in 2014, 23 percent of our global sales were generated from so-

lutions that were rated as “Accelerator,” demonstrating the significant contribution of innovative solutions to address customers’ sustainability needs.

- Performers are solutions that meet the standard market requirements for sustainability. Around 74.1 percent fall under this category.

Four categories to describe the degree of sustainability contribution



- For the Transitioners, specific sustainability issues have been identified and concrete action plans defined. These recommendations are in the process of being implemented. Around 2.6 percent of the analyzed products are currently in this category.
- Applications with a significant sustainability concern are labeled Challenged. BASF is developing plans of action for these products in order to find better solutions, which can include research projects, reformulations, or even replacing one product with an alternative product. This currently applies to 0.3 percent of applications.

tions help to minimize food losses and lengthen the shelf life of food products. We are working constantly to improve the capacity of our solutions to protect goods and to enhance the environmental footprint of packaging, for example:

- polyamide films for flexible packaging allow for less material use compared to rigid packaging;
- water-based resins for flexible printing reduce air emissions compared to solvent-based technologies; and
- bio-based or compostable materials allow for improved environmental performance in paper and plastic packaging.

our global Know-How Verbund as well as through collaboration with partners and customers. Furthermore, in a program and project management process, we continuously review the chances of success and the underlying assumptions of research projects. This review includes all phases – from idea generation to product launch – as well as the thorough analysis we conducted of our products in more than 60,000 applications. The findings help us steer our portfolio and to find better solutions today and over the long term.

We can specifically develop even more sustainable products together with our customers, or find alternatives for products that no longer fulfill our standards. The trust of customers and consumers is essential for the successful introduction of new technologies. That is why we enter into dialog with stakeholders at an early stage of development.

We are committed to integrating environmental protection and socially responsible conduct into our business activities. Infringements of our voluntary commitments and legal violations also represent a reputational risk and could lead to operational or strategic risks. Before acquiring a company, we take into account its focus on sustainability, and we consider this in the acquisition process. Based on our materiality analysis, we initiate change processes in the company in order to be prepared for any potential risks and to exploit opportunities. We have established global monitoring systems, which also include our supply chain. These enable us to ensure adherence to laws and our voluntary commitments in the areas of environment, safety, security, and health, as well as to labor and social standards. In order to ensure society’s acceptance of our business activities, we engage in an ongoing dialog with relevant stakeholders.

We will continue to concentrate on researching, developing, and offering our customers attractive solutions. This is something we have been doing successfully for 150 years. ■

To qualify as an Accelerator, a solution must make a substantial contribution to at least one designated and relevant criteria of sustainable development while not having significant negative impacts on another relevant area of sustainable development.

- Cost savings downstream
- Climate change
- Energy
- Resource efficiency
- Health and safety
- Biodiversity
- Renewables
- Emission reduction
- Water
- UN Millennium Development Goals

For example, Accelerator solutions for the automotive industry include:

- plastic materials replacing metals in cars, and thus minimizing their weight and making them more fuel-efficient;
- catalysts decreasing harmful exhaust emissions, thereby improving air quality;
- integrated coating processes that reduce the number of necessary steps in the coating of cars, thus reducing energy consumption as well as greenhouse gas and VOC emissions; and
- innovative fuel additives that keep engine valves clean, thus reducing fuel consumption and exhaust emissions.

Other innovative solutions are offered to the packaging industry. Our solu-

Path forward

Moving forward, innovation is – and remains – the driving force for chemistry. We are observing a trend toward more sustainability in our customer industries. Therefore, we want to take advantage of the resulting opportunities with innovations – particularly in the growth fields we have identified. These include batteries for mobility, functional crop care to improve agricultural efficiency, solutions for water treatment, and technologies for the use of renewable energy sources, such as wind, solar thermal, and photovoltaic power.

We optimize the effectiveness and efficiency of our research activities through