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Speech

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Success through innovation

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The spoken word applies.

[Slide 1: Success through innovation]

Ladies and gentlemen,

A warm welcome from me as well. Christoph Wegner and I, along with our experts, are very pleased to present a broad spectrum of BASF's R&D to you today.

Our presentation is titled: Success through innovation. Innovation has always been part of BASF's DNA. And especially in volatile times like these it is crucial that we use our innovative strength to develop competitive solutions that differentiate us as a company in our markets and give us a competitive edge. So, in the next couple of minutes we will show you what the vision for our research looks like and what we have already achieved along the way.

[Slide 2: Our ambition]

About a year ago we launched our "Winning Ways" strategy with a clear ambition: to be the preferred chemical company to enable our customer's green transformation. Our ambition goes beyond making BASF green. We want to inspire our customers to make us their partner of choice. So that they'll choose us every day as the chemical company they work with and buy from. A trusted partner in creating their future success.

Research and development play a key role here: Our product and process innovations allow our customers to innovate and grow in their respective markets with more sustainable products enabled by BASF. Our innovations significantly contribute to achieving profitable growth and value creation in a world that is transforming towards more sustainability.

We want to remain front-runners in innovation with strong R&D capabilities. We are pursuing this goal with our sharpened research portfolio, which allows us to move forward with a clear focus.

[Slide 3: The chemical industry will remain essential to all other industries, but the playing field is changing. So are we.]

Focus is the keyword here. The chemical industry will remain essential to all other industries, but the playing field is changing. Since I started as a chemist at BASF 30 years ago, there have been many changes. And probably more than ever before,

we must respond to them by focusing on the topics where success in R&D will make a difference for our customers, society and BASF. On this slide, you can see the top three areas we focus our R&D activities on.

Let me start with our focus on green transformation. We deliver products that offer our customers sustainability advantages. How do we do this? By procuring renewable energy to power our plants. By using renewable and circular raw materials in selected value chains. And by developing and implementing new technologies to add sustainability features such as recycled, bio-based content or zero product carbon footprint to our products.

Our Verbund sites provide an ideal setup for our green transformation. With our heat and material integration we reduce waste to a minimum and therefore ensure highly resource-efficient production. And we continuously improve and optimize our Verbund setups towards even lower CO₂-emissions and more renewable raw material input. This enables us to use our existing assets to produce more and more products with sustainable attributes for the markets that are ready for greener products.

In parallel, we also develop completely new technologies for our green transformation. Once the market demand allows for a scaled investment, we will integrate them in our Verbund setups. I'm very proud that we can present one of these technologies today: our innovative methane pyrolysis – a BASF-developed technology that will provide low-carbon hydrogen at the most competitive cost. More on this later.

The second focus area is innovation in sustainable agriculture. Farmers are facing global challenges such as climate change and the need to produce more quality food, feed, fiber and feedstock for a growing population. On top, there are societal demands to achieve all of this sustainably, and on less arable land. Not to mention regulatory pressure limiting the ability to manage pests, weeds and diseases. In order to meet these challenges, we connect technologies and develop innovative solutions that help farmers leverage the greatest potential in sustainability and profitability. Therefore, we do a lot of R&D in the areas of crop protection, seeds & traits and vegetable seeds as well as in digital and sustainable solutions for agriculture. We will also show you an example of how we are doing this later on.

Competitiveness is our third focus: Continuous improvement of our technologies, our processes and our operations has always been a key strength of BASF. This is how BASF stays competitive. Continuous improvement in energy and resource efficiency of our plants not only secure our cost leadership positions in many businesses but also makes our products more sustainable. We will continue this successful path with incremental process improvements across our portfolio that make us better and better. In addition, harnessing artificial intelligence will help us to advance productivity and further accelerate innovation.

[Slide 4: Our innovation engine runs at full speed and delivers results]

Where do we currently stand?

Our innovation engine is running at full speed. To further strengthen our R&D portfolio, we are continuously researching new solutions and improving existing products and processes, leveraging our innovation power. And this, too, can be measured.

We invest continuously and considerably in research and development. With annual investments in R&D of around €2 billion, we are the leading company in the chemical industry. We are also planning expenditures at a similar level for next year. This also reflects the importance and confidence we place in R&D. So, there is financial tailwind for innovation at BASF. But money alone is not enough. This engine is driven by around 10,000 R&D employees globally. We leverage their expertise and know-how and translate them into tangible results.

Over 15% of BASF sales come from innovative products. We generated sales of around €11 billion in 2024 with products launched on the market in the past five years that stemmed from R&D activities. Moreover, about 80% of our R&D activities in scope directly support BASF's sustainability targets. This is also a strong commitment to the green transformation.

[Slide 5: We leverage our innovation power]

Last year, we filed over 1,000 new patents worldwide. Here, too, our efforts toward sustainability are evident, as about 45% of these patent applications focus on sustainability. We are also constantly working on innovations in the field of

digitalization, as about 23% of our patents focus on digitalization and artificial intelligence.

The number and quality of our patents also demonstrate our innovative power and long-term competitiveness. The Patent Asset Index, a scientific international indicator for patent portfolio strength, developed by the WHU School of Business, underlines this. Once again, we ranked among the leading companies in the chemical industry in 2024. This makes me particularly proud and is a great achievement by the entire BASF R&D team.

[Slide 6: We are close to our customers and markets]

Our innovative strength is also a result of our global R&D presence, which is vital to our long-term success. We are where our customers are. With around 70 R&D sites around the world and hubs in Ludwigshafen, North Carolina and Shanghai, we are close to our customers and markets. Through this presence in every region, we understand our customers' needs and we can navigate cultural nuances and serve local markets effectively.

This also means that we co-create value with our customers around the globe in joint R&D projects, with local champions who understand the local market. This enables us to meet the needs and requirements of the regional markets in a differentiated way, establish new customer relationships and grow our business. Focusing on profitable growth also means being successful in high-growth markets. China will remain the growth engine for the chemical industry thanks to its advantages in scale, domestic demand and infrastructure. India is also expected to grow fast. This is why we aim to further strengthen our R&D activities in both countries and grow in line with the chemical market in China until 2035 and above market in India over the same timeframe.

Christoph will now show you an example of what co-creating with our customers looks like. Christoph, I hand over to you.

[Slide 7: We improve products. Together with our customers.]

Thanks Stephan, and also a warm welcome from my side.

It is very important for us that we develop new products together with our customers – and improve existing ones. A current example is the collaboration with VAUDE, the leading manufacturer of sustainable outdoor clothing and equipment. Together we have developed a new bike backpack based on BASF's Ultramid® ZeroPCF.

This is a sustainable polyamide with a net-zero carbon footprint. It is a great example of how we're driving the green transformation together with our customers.

For the production of this polymer, we use renewable electricity and attribute biomethane and feedstock made from used cooking oil. The methodology follows a certified mass balance approach. Our unique BASF Verbund makes this approach possible. All our plants are smartly interconnected, which gives us a high degree of flexibility. This is how we can support our customers very quickly with carbon-reduced products.

[Slide 8: We improve processes. To reduce our emissions.]

Process improvements are also important to reduce our CO₂ footprint. With many individual measures – from small to big scale – an impressive cumulative impact has been achieved. You can also see that on the chart: All of the measures from 2015 to 2024 reduced the CO₂ emissions of BASF Group by more than 1.3 million tons.

Let me give you two examples: The first one is from Yeosu in Korea. They enhanced the heat integration with additional heat exchangers and thus reduced emissions by 9,000 tons of CO₂ per year.

The second example is even more impressive: the syngas plant in Ludwigshafen is at the beginning of many of BASF's value chains. It delivers gases to more than 80 of our other plants. Simple but smart adaptations of steam supply in the production process enable us to reduce CO₂ emissions by 60,000 tons per year in the future. This truly remarkable achievement was honored with this year's BASF Winning Ways Award.

Now, let's switch gears. Let's talk about artificial intelligence in R&D.

[Slide 9: Artificial intelligence has become indispensable for everyday R&D]

Digital solutions and artificial intelligence are indispensable in today's R&D work.

It all starts with comprehensive literature search. At BASF, we use QKnows for this purpose. It enables researchers to search scientific literature, patents, and internal reports all in one place. In total, the database contains more than 400 million documents. AI capabilities make finding relevant information much quicker: users can ask questions in their preferred natural language and chat with the results. With advanced reasoning and deep research modes, it helps users to explore complex scientific topics and generate meaningful insights.

You will hardly find such a powerful system elsewhere. This clearly gives us a competitive advantage.

[Slide 10: BASF's first AI reactor]

Our next example is our first AI Reactor. It plans, executes and analyzes chemical experiments with AI. More importantly, it learns and autonomously triggers the next cycle.

Maximizing the yield of a reaction is one of the typical and sophisticated tasks of a chemist. For this, it is still common practice to vary different reaction parameters one after the other. This can be a very time-consuming and long process before yields have reached a satisfying level. Therefore, it would be ideal to have a platform that autonomously runs, learns and optimizes these kinds of reactions.

We have recently developed a system capable of doing exactly that. The basis is an automated lab setup that can run chemical reactions – including steps such as dosing, sampling, and analytics. To close the learning and optimization cycle, it is crucial to have a powerful AI algorithm that understands the outcome of the reaction, can learn from the results and can plan and run the next appropriate reaction cycle.

Based on the results of previous experiments, the system proposes a new set of input parameters for the next run, aiming to maximize the defined objectives. Our first experiments already demonstrated that we are 20 times faster than doing it manually. We are currently planning to expand this system to cover all chemistry relevant to BASF.

[Slide 11: Predictive Regulatory Toolbox for Plant Protection Research]

Our third example shows how we are using AI in our R&D for Agricultural Solutions: Our goal is to minimize the risk that plant protection products reach the groundwater after their application.

Therefore, the assessment of groundwater leaching is a critical step for the registration of new plant protection products. This process is complex, resource-intensive and requires deep regulatory expertise. That is why we cannot systematically assess groundwater leaching in early research phases where we have a high number of candidates. If we find these issues late in the development process, it can result in a significant loss of resources when switching to new lead candidates.

To address this, our regulatory scientists have developed a digital tool that was launched this past summer. It uses machine learning to efficiently predict groundwater leaching risk. One million simulations were run on our supercomputer Curiosity to establish the underlying model. We now apply this in the early research phase to identify critical candidates early on and focus on the most promising. In short: AI helps us to focus our resources on the safest compounds with the highest chance of success.

I hand back over to you, Stephan.

[Slide 12: Stay tuned...]

Thanks, Christoph. Let me now introduce four exciting topics:

Our first lecture will be about “Circularity you can wear”: Dag Wiebelhaus will talk about how to transform textile waste into high-quality fashion of the future. The name of the BASF solution which supports the green transformation is loopamid® – high-quality new fibers with significantly lower CO₂ emissions which can be produced from old textiles.

Afterwards, Marie Schröter will share insights into a breakthrough technology – methane pyrolysis – that will provide competitive hydrogen for the future and contribute to both, competitiveness and the green transformation. We have been working on this technology for more than a decade and developed a superior reactor

concept that we successfully validated at our test plant in Ludwigshafen. We are really proud that the next step now follows: By combining our process innovation with ExxonMobil's scale-up expertise, we will jointly develop this into an industrial solution. Our goal is to create a demonstration plant for industrial production of this cost-efficient low-emission hydrogen solution.

Our third presentation will be “Rethinking catalysts”: Christian Schulz will introduce the new X3D[®] catalyst shaping technology. This innovative technology is based on 3D printing and enables the production of catalysts with customized geometric shapes. As a milestone in catalyst development – this technology delivers optimized performance and efficiency, and is an example of how we are continuously improving our competitiveness.

And last but not least, Lorenzo Aleman-Sariñana will talk about “Seeds full of science”. The team has developed two innovative herbicide-tolerant traits for cotton seeds. This sustainable agriculture example shows how cutting-edge biotechnology is making cotton cultivation in the USA and Brazil more sustainable and weed management more flexible.

So, ladies and gentlemen, stay tuned!