



We create chemistry

## **Presentation Chemicals**

Transcript Speech

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Member of the Board of Executive Directors

**[Title slide: Chemicals]**

I now have the pleasure to present the Chemicals segment and Materials segment to you.

**[Slide 2: Chemicals: We are a leading global player in petrochemicals and intermediates]**

Let's start with Chemicals because Chemicals is the starting point of our value chains. We are a leading global player in both petrochemicals and intermediates. In 2023, we reported sales of €10.4 billion; 72% of that was generated by the Petrochemicals division, 28% by the Intermediates division. We have a very broad portfolio of roughly 900 products that we sell to 6,000 customers in various industries. We have a nice split between commodities and specialties. You see here the most relevant customer segments: chemicals and plastics, consumer goods, construction, nutrition and health, energy and resources.

Now, what are the key differentiating factors? What makes our business different from our peers? First of all, it's the deep Verbund integration. In all regions, we are backwards integrated and that gives us superior cost positions and advantages for decarbonization, as Markus explained yesterday. Towards the end of my presentation, I will give you more details on how this works and how it gives us a competitive edge. We are uniquely positioned as a partner for our customers when it comes to a value-based, green transformation we can earn money with.

Now, what is the role of the segment Chemicals in BASF Group? Based on the very strong financial performance that we have seen in the past, we want to maintain this contribution, strong earnings and cash contributions over the cycle. And of course, we are the starting point of the value chain. So we have to ensure a very reliable and cost-competitive supply for our downstream businesses.

There is one additional element that is important in Chemicals. If you look at the Scope 1 and Scope 2 emissions of BASF Group globally, half of that is emitted in the Chemicals segment. So here we also have the biggest lever to decarbonize and to ensure our product portfolio becomes more sustainable and greener.

**[Slide 3: The Chemicals segment holds leading market and cost positions in key value chains]**

What is important to notice is that the Chemicals segment holds leading market positions in all key value chains and leading cost positions. Let's start with Petrochemicals here: In ethylene oxide, styrene and XPS, we are number one in Europe. Globally, we are number one in acrylic acid and in the acrylates, in butyl acrylate and 2-EHA. We are number two in Europe in MEG. In the superabsorbent polymer business, we rank among the top three globally.

And when it comes to Intermediates: In amines, we have more than 300 molecules, the most diverse portfolio of this type of intermediates. This is key because we have here applications in industries such as pharmaceuticals, crop protection, cosmetics, detergents, textiles – so basically all kinds of customer industries.

We are also number one in PolyTHF for the non-spandex, for the engineering applications. We are number one globally in neopentyl glycol for powder coatings and propionic acid with applications in the food and feed sector.

**[Slide 4: Strong earnings contribution over the cycle]**

Let's recap a bit the financial performance of the past years. You see here the period of 2019 to 2023. That was characterized by very high volatility. In the first years of the pandemic, we saw very high demand for durable goods. That was a lot of tailwind. We also enjoyed very high asset effectiveness in the segment, so we could benefit from this high demand. And we also scored with excellent margin management.

In 2023, you see here the impact of destocking in our customers' value chains and a supply normalization. Over the cycle, Chemicals made a remarkably strong earnings contribution to the BASF Group. EBITDA before special items on average during this period was €2.2 billion – that is a quarter of the Group number – and we had a very healthy margin of 19%.

Excluding the one-time effects of the big investment project – our Zhanjiang Verbund site that will be a fantastic growth platform going forward – we also had an average cash conversion of 65%. So it really emphasizes and underpins the role that we have for the Group. ROCE amounted to 13% on average.

**[Slide 5: We expand our presence in growth markets by building on cost and sustainability leadership]**

What are the main factors and what key measures have we been taking to position the Chemicals segment for further profitable growth? You see here that we launched our Zhanjiang Verbund site project in December 2019. I will later go further into the details, but that's really exciting because it will add 25% additional sales to our segment. So it's a really fantastic growth driver in the largest and fastest-growing chemical market worldwide.

We have also done a good job in broadening our product offering when it comes to sustainability attributes that we add to our products, such as bio-based, recycled or biomass-balanced or LowPCF or ZeroPCF. Already 30% of our sales in the segment come from products that actively support sustainability.

Then, the core – our DNA – of what makes us extremely strong upstream is our cost leadership. This is not only because we have best-in-class technologies, which we also further develop. We have operational excellence. I will give you some details on how much we benefit from this in a continuous improvement approach. And we also swiftly adapt the assets in Europe, in particular in Ludwigshafen, which are not competitive to restore competitiveness here.

**[Slide 6: Our strategic priorities for 2024 – 2028 will drive value creation for BASF Group]**

We have four key strategic levers, four priorities that will drive value creation in the segment. The first one I mentioned already: our Zhanjiang Verbund site

in China. It will balance our regional footprint and make us much stronger in Asia, in particular in China.

The next one is: We maintain our leading cost position. That's a key element. We have to ensure the high asset effectiveness that we have demonstrated in the past. And we will further optimize best-in-class technologies.

The third one is really exciting because, as I said, if we decarbonize our Chemicals segment, this has also a positive impact on all the downstream segments. So we lay the foundation here. And with the Verbund system, we have a clear advantage over our peers because we can do this transfer from upstream to downstream in-house. It is in our own hands how we steer this. The Verbund offers drop-in solutions.

Yesterday, Markus explained to you: We are not going to invest billions and billions into new plants right now. At our Verbund sites, we simply will get more access to renewable and recycled feedstocks, then feed them into our steam crackers, syngas plants and other elements of our value chains. We can then allocate the sustainability attributes to the products using the mass balance approach. This helps us, with very low capex, to ramp up the volumes that our customers request.

The transformation that really requires massive capex will come at a later stage, beyond 2030. We are flexible. We can do this any time. We are currently pioneering, testing, assessing technologies to be ready for this step once willingness to pay and readiness in the market is a given.

This also enables us to do the fourth point here: focus on capex discipline. Once we have started up the Zhanjiang Verbund site, we will bring capex down below the level of depreciation as early as 2026.

**[Slide 7: Customers benefit from our strong global production footprint with 90% of plants integrated into Verbund sites]**

Now let me start with the first lever. You see here that we have an extremely strong global production footprint. 90% of our production assets are fully integrated into Verbund structures, which gives us a fantastic cost advantage over our peers. You see here an overview of the Intermediates and Petrochemicals plants around the globe. Basically all the material that we sell in a certain region, we produce in that region. There are some opportunistic businesses. Sometimes we export some petrochemicals from one region to the other. But basically, we are talking about close to 100% production in the region for the region.

It is also very interesting to look at the sales split of the Chemicals segment, which is currently Europe 51% and Asia 18%. With the Zhanjiang Verbund site, we will bring Asia up to one-third of our sales. So we will really participate much more in this attractive growth market, and we will reduce the exposure in Europe to 45%. It's important to note that these numbers do not include our Nanjing Verbund site, the joint venture with Sinopec. If you include that, our sales share in Asia and in China would be higher, of course.

**[Slide 8: We invest in Asia to capture growth in the largest and fastest growing chemical market]**

Because this element is so important, let's have a closer look. Here you see the details. You see the sales of the Chemicals segment split by region compared to the chemical production in every region. Asia Pacific already accounts for 66% or two-thirds of chemical production worldwide. By 2028, this will be close to 70%. We can now change the share of our sales in Asia Pacific from 18% to 32% to bring it more in line. So we can capture growth in the largest and fastest growth market for our industry.

**[Slide 9: BASF's new Verbund site will accelerate our growth in the largest chemical market and become a major cash and earnings contributor]**

This brings me to the Zhanjiang Verbund site. It's really a fantastic project. I'm very excited about it. I'm there basically every quarter to have a look myself. What you see here on this picture is just roughly 60% of the site. It's a 4-square-kilometer construction site with more than 20,000 workers on site every day. And we have reserved another roughly 5 square kilometers. So this is a very long-term thing. We have all the space to grow over the next decades, as we have been doing at our Verbund sites in Antwerp and Nanjing.

What is exciting about the Zhanjiang site? It will be the most advanced Verbund site. All the know-how, all the expertise we have gained over time and building six Verbund sites so far, flows into the design of the new Verbund. We will use cutting-edge technologies. We will power the site with 100% green electricity. We have equity shares in local wind farms just around 60 kilometers away from the site. We have a diverse portfolio, including not only wind but also solar. We also apply AI and all kinds of digitalization. Later, I will give an example what we are doing here. We will have automated guided vehicles.

And all this is on time and in budget. I can confirm here our expectation for the year 2030, with sales of between €4 billion and €5 billion and an EBITDA of between €1 billion and €1.2 billion.

What will also give us a competitive edge is that we are building a flex-feed steam cracker with a very high share of butane, which is quite unusual. So we can really play arbitrage between different feedstocks and adjust it to the needs of our value chains, influencing the so-called severity. That is the share of propylene, the share of C4 olefins that you can get out of the cracker at the expense of C2. As we are C3 and C4-driven, this is of high value to us.

The capex share of the Petrochemicals division at the whole site is roughly 80%. As I mentioned already, we will boost sales by 25% in 2028 compared to 2023. Pre-marketing activities are ongoing. Now I would like to show you a short video to give you a little bit of a glance of what is happening there every day.

(Video)

So what I would like to emphasize is: First of all, the team is fully motivated. It's exciting. We get people from all parts of China who want to work in this lighthouse project in the chemical industry.

At the beginning, when we had this idea of building a site in the southern part of China, we were a little bit concerned about whether we would get enough qualified people. I can tell you, we have more than 50 engineers and chemists and technicians that come from our Nanjing Verbund site who are now working and building this new site. So all the know-how flows into it, and there is no lack of talent.

You have also seen: We have a very good relationship with the nearby residents and community. We transferred the practices of community advisory panels to Zhanjiang as well. We are very transparent about what we are doing and how we are making sure the site operates in a safe way.

There are two key competitive advantages that I also want to bring to your attention. First of all, you have seen the jetties. We have our own deep-sea port that gives us the full autonomy to import the feedstocks that we need. Of course we can source locally, and we will do. But at any point in time, we can also source from the Middle East, from the United States, from Canada, and we will leverage this.

Secondly: Yes, it's a 100% BASF site, but it's not isolated. You have seen the pipeline connections to a Sinopec refinery and cracker site, and to Baosteel, one of the world's largest steel plants. This also gives us fantastic synergies in terms of, for instance, technical gases, plant air, oxygen and nitrogen. We have bridging opportunities when we do turnarounds at Sinopec or at BASF. So, in some ways, it's the best of both worlds.

**[Slide 10: BASF's Verbund site in Nanjing is a prime example of our success in China and is one of our most profitable sites worldwide]**

Now you may think: Okay, this guy on stage is getting very passionate. He spent 10 years in China. Of course, he tells us a nice story about China and Verbund sites.

Yes, I will because I'm very confident that this big Zhanjiang site will be a profit-making machine. That's because it's our second Verbund in China. It's not our first one.

This is our first one. I stood at the helm for four years, between 2012 and 2015. This is really a prime example of our success in China. It's our most profitable Verbund site and one of the top sites globally.

As you know, it's a 50/50 joint venture with Sinopec. We commenced operations back in 2005. We had several expansion waves, and now we have a very diversified product portfolio. It's BASF's third-largest site so far: 38 production plants, 3 million metric tons of products, also steam cracker-based. So fundamentally very comparable to what we are doing in Zhanjiang. Only now, Zhanjiang has the latest technology, even more top-notch, more digital.

It is demonstrably best in class in terms of operational excellence and EHS performance. If you ask Sinopec, they will confirm that it's their best joint venture and they are very happy about it. I'm totally convinced that we can replicate this success now in Zhanjiang.

You see the figures here: 22% EBITDA margin on average since startup, 19% ROCE. Very consistently, in every single year, we had a higher EBITDA margin than the Group average. There's also returns. To date, BASF-YPC has paid €4.4 billion in dividends to both parent companies, meaning €2.2 billion to BASF. So, I think we have good reasons to be confident about the success of Zhanjiang.

**[Slide 11: We secure our leading cost positions through operational excellence and continuous process improvements]**

Now the second lever: What do we do to ensure that we keep our leading cost positions? Here you see what we do in terms of operational excellence measures every year: reducing fixed cost, variable cost and squeezing more capacity out of existing assets. Many of our plants are 20, 30, 40 years old, but we are still improving them. We keep them in good shape, and you can still improve by reducing input factors for steam, raw materials, other kinds of energy. Or you take out certain elements and make them leaner because you improve the process. Over this period here, we achieved accumulated total savings of €550 million, on average every year €80 million. So you can really say this is part of our DNA.

Markus yesterday rightly said, it's not about the Board announcing a new program every year and you have to do it. This is what our teams are doing every day in their plant. You don't have to tell them. They love that they are doing it, and they know how to do it, and we will never run short of creative ideas.

Operational excellence is also exciting because, typically, you have a very short pay-back time, usually less than one year. And the investment cost is also typically lower than the sustainable savings that you achieve.

Now I come to the AI example. Here you see that we expect by 2027 that we will apply AI in 20% of our plants in this segment. By the way, we are doing this in other segments as well.

What do we do, for instance, with AI? We have a PlantGPT, that's a BASF-owned large language model. In the first pilot case, at the acetylene plant in Geismar, we have fed it with 800 documents – training materials, engineering handbooks, input from the shifts. And whenever there is an undesired state at the plant or the operator does not exactly know what to do, the AI immediately provides an answer and advice, suggestions how to optimize energy consumption, how to avoid an unplanned shutdown, and so on.

Now, the next level we are working on is that we give the model live access to live data, to the advanced process control system. An advanced process control system is on top of the conventional distributed control system you have in all the plants. It's already learning, giving advice and optimizing. Now this optimizing system, with all the expertise that has been created, is feeding artificial intelligence. We are pretty sure this will be a breakthrough.

**[Slide 12: We differentiate based on our leading cost position: Acrylic acid]**

Of course, the leading cost position can also be based on a leading technology position. Here you see one example. We are the world's largest producer of acrylic acid. In all significant regions you see here a benchmark. We compare the 2023 cash costs of all competitors. As you see, we are always in the cost-leading position.

Why is that? You might ask: Okay, that's nice, but how can you keep such an advantage? Will it fade away over time? Or can you keep the competitive edge?

We have demonstrated over many years now that we can keep it. First of all, we have proprietary technology that we are constantly further improving. Secondly, part of the performance is due to the catalyst. We have the expertise in-house, so we can constantly bring in the latest catalyst generations to squeeze out higher yields, higher selectivity, less waste. We continuously optimize energy consumption with the advanced process control systems that I mentioned.

The devil is in the details. From time to time, you have to exchange catalysts. Sometimes you have to do a caustic wash because there's undesired polymerization in distillation columns. And you further optimize how you do this. Competitors might need four days, and we do it in three days. All these things add up and keep the cost position leading.

**[Slide 13: Highly efficient Verbund puts BASF in a unique position to unlock profitable business with the green transformation of our customers]**

Now some examples for the big advantages the Verbund offers over our peers when it comes to developing sustainable products at scale. We have already developed a portfolio of roughly 130 products in the Chemicals segment that are either ZeroPCF, LowPCF, biomass-balanced, chemically recycled or bio-based.

The advantages of the Verbund: I tried to summarize it here. First of all, inherently the Verbund needs less energy and resources, and creates less waste than conventional production. We always use by-products as the feedstock for the next neighboring plant. We have lower emissions. We also require less transportation; that automatically reduces emissions as well. We use natural gas-based combined heat and power plants, which gives us an advantage compared to coal-fired power plants, for instance. And then we have on top the drop-in solutions that I described.

This enables us to create a broad portfolio. This portfolio is scalable because you are not investing into a dedicated plant with a new technology, taking technology risks into consideration. You can do it in existing assets, and you can gradually replace fossil-based production with renewable or circular-based production.

**[Slide 14: Profitable growth with BASF OASE® carbon capture technology]**

Let me zoom in on one example that you might not know. BASF offers one of the most efficient carbon capture technologies, under the brand name OASE®. The advantage is very high selectivity. You can remove up to 99% of CO<sub>2</sub> from gas streams, such as flue gas. We do this with the help of amines formulations.



We call them gas treatment agents. Our business model is a combination of licenses that we sell and engineering services. We do conceptual studies with the customers. We offer troubleshooting. We sell the first fill when a new plant is started up, and the refill.

You see on the right-hand side that this business is really taking off because there are applications in power plants, in hydrogen production, in LNG, in biogas, in cement. We are even taking this technology to the seas: CPGC, a company in China that operates LNG carriers, will now apply the technology on their ships.

In Lengfurt in Bavaria, we have a pilot plant together with Heidelberg Materials and Linde, where we have premiered the large-scale application of our technology in the cement industry. That offers huge potential. So we will double the contribution margin of this business over the next years. This is just one remarkable example I wanted to share with you before I come to the last lever.

**[Slide 15: Strict focus on capex discipline]**

Okay, so the fourth lever is that we have a very strict focus on capex discipline. Here you see how capex will drop below the depreciation level starting in 2026, once the capex peak in 2024 and 2025 will have been swallowed. This capex is well-spent money because it will create the growth driver and earnings and cash contributor in Zhanjiang.

**[Slide 16: We are accelerating value creation in Chemicals]**

With that, I would like to summarize: I truly believe we are well positioned to accelerate value creation in the Chemicals segment. We have the Zhanjiang Verbund site as a growth driver. We build on leading cost positions that we keep and safeguard. We are leading when it comes to a green transformation with low capex and basically no technology risk. And we focus on very strict capex discipline.

With that, you see that we target an EBITDA before special items increase of €1.5 billion to €2.1 billion by 2028. So, at midpoint, this is a mind-boggling 150% and a CAGR of around 20%. This is mostly driven, of course, by Zhanjiang, but also all the other measures that I have explained to you.