



We create chemistry

Capital Market Update
– Presentation Polyurethanes (PU) Value Chain
Transcript Speech
October 2, 2025

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[Slide 1: Title slide]

Ramkumar Dhruva: Ladies and gentlemen, it's a great pleasure for Martin and me to present to you our polyurethane value chain in BASF.

We chose this picture on the title side for a few reasons. This was taken a couple of weeks back, close to New Orleans port. This depicts one of the modules of our MDI expansion in Geismar. As you see, this is in the final stages of implementation. This also shows that we are investing in the future.

We are also doing things in new ways. As you can see, this is the first modular MDI plant of BASF, and we are reinventing ourselves. In doing so, we want to keep the project on time and on budget. Like the ship, at BASF we are also on the move, and we are making progress. A perfect picture to start our presentation on the polyurethane value chain in BASF.

[Slide 2: The Materials segment comprises two divisions with complementary traits]

Ramkumar Dhruva: In the next slide, you will see the four segments of BASF's core. Within that, today's presentation is on polyurethanes. Our polyurethane value chain is divided among the two operating divisions, Monomers and Performance Materials. Together, they comprise the Materials segment.

For us in Monomers, our focus is on having a broad portfolio of basic monomers and polymers. Within the polyurethane value chain, we would like to focus on large-volume isocyanates with a clear emphasis on cost competitiveness and sustainability.

Martin Jung: In the Performance Materials division, we offer 6,500 mostly tailor-made products along the product lines of polyurethane systems, our topic today, as well as thermoplastic polyurethanes, engineering plastics and a couple of specialty products.

Our customers expect from us that, first of all, we understand their application, that we can help them solve their issues and certainly that we always offer a competitive price. For instance, if we develop a crash absorber with one of our customers in the automotive industry, they expect us to provide consultancy in the material choice, but also in the processing choice, testing, simulation. And eventually, the crash absorber has to work in a car, and we all rely on the functioning crash absorber.

So, it is a lot of know-how that we have to bring to our customers. The business is know-how-heavy, people-heavy. Therefore, half of our 7,700 people are working in the front end, i.e., in sales, technical sales, marketing, tech development and R&D.

Sustainability is a big topic for both of us, as it is in the entire plastics industry. We will talk about that in more detail for the polyurethane value chain because sustainability in the polyurethane value chain is a complicated thing. I think we have good examples of how we tackle it, both from the energy and product carbon footprint side as well as from the circularity side.

[Slide 3: Materials Segment]

Martin Jung: As Markus showed this morning, the Materials segment is rather substantial for the core. It is 30% of the core. Last year €13.5 billion in sales, split half and half between our divisions. Actually, the lifeblood between our divisions is the polyurethane value chain; that makes up 50% of our two divisions. As Markus phrased it yesterday: Our two divisions are connected at the hip, especially through this polyurethane value chain.

[Slide 4: BASF runs two complementary business models holding top market positions]

Martin Jung: Both of us command pretty good market positions in this. You see on the right side of the slide, the Performance Materials side, our main franchises and the market shares. You see polyurethanes accounts for 26% of sales of the entire segment. We have a number-one market position worldwide in polyurethane systems, mainly in the Western markets. Higher market shares, above the 20s in Europe as well as in the United States. And then lower market shares in the countries outside of China and lower again in China, which is a very big and competitive market.

If you look at the competitors, you will see those are the same names you also find in the Monomers scene, but the market is a different one. If you look at the systems market, around 60% is commanded by the Big Five, whereas there is still another 40%. And the players that account for this 40% are mainly found in Asia. There, the market is also penetrated by many smaller system houses that buy a lot of the raw materials in the market and then formulate for their customers. So, while you find the same competitors, it is a different market.

Ram, what does it look like in Monomers?

Ramkumar Dhruva: As Martin alluded to, in both the Monomers and the Performance Materials divisions, we are leaders in our respective individual market segments. If you look at isocyanates, one of the big business areas of our Monomers division: 29% of our segment's sales are generated by this business. We have a leading market position in MDI, globally number two. In terms of TDI, we have a top-three position.

It is not only isocyanates. If you look at the broad portfolio of monomers, when you move to polyamide-6 or inorganics, we have a leading market position in the respective markets.

[Slide 5: With our global polyurethanes production network, regional R&D and creation centers, we are close to our customers]

Ramkumar Dhruva: If you look at the global footprint of our Materials segment: For the Monomers division, backward integration, economy of scale, competitive utilities and site structures are very critical.

But not only that: Being close to our customers in the respective regions is also very important for a robust, reliable supply chain, low logistics costs and our ability to quickly react to market changes and customer demands.

Given that, the Monomers division operates its isocyanates assets in most of the key regions at integrated sites. For example, in North America, we operate our isocyanate plants in Geismar. In Europe, we operate our isocyanate/polyurethane assets in Ludwigshafen and Antwerp. In China, we have our isocyanate assets in Shanghai and Chongqing. And in the rest of Asia, we have Yeosu, South Korea.

This means we are *the* global player among all isocyanate producers – with assets in all key regions – even in Asia, with one inside China and one outside of China.

We thus have a global presence as well as a reasonable distribution of sales across all regions.

Martin Jung: Indeed. You see that the biggest polyurethanes sales for both divisions are in Asia. That is a little bit unusual if you compare that to the entire landscape of BASF. 40% of the polyurethanes value chain is in Asia, followed by a strong position in Europe and obviously North America. South America is a much smaller market, it represents 3% for us.

Compared to the Monomers setup, at Performance Materials, we obviously follow their supply, but our asset structure is totally different. We have 26 system houses worldwide. For us, the proximity to our customers' manufacturing is the most vital thing.

That is why you see so many system houses. You might say: 26! Is that operational excellence? – Yes, it is. Because we always have to weigh various considerations: supply chain, being close to the customer, while simultaneously having scale and efficiency in our system houses. That is a balance we have to strike every day.

This is why we have also closed four system houses in the last couple of years: in Russia, in the Middle East, and two in Europe. That is also an ongoing exercise. We are always adapting the setup in every location to strike the balance between operational excellence and supply chain proximity to customers.

But it is not only the supply. It is also the know-how that you have to bring to the customers. Therefore, you see here R&D centers as well as what we call creation centers. Those are cooperation centers, where we interact with designers and many people from our customers. So, it's not only the assets and the material: We must also have the people, the know-how and the right technical service in place in order to win projects and acquire and retain customers.

If you look to the future, as we also talked about capex and asset development, we would say that we have enough assets in place: 26, a sizable number. Going forward, we can actually accompany any growth in the market by just putting people in a plant – that is what you do in these downstream plants – or by just incrementally increasing the capacity of our plants.

Both options are possible and both are actually rather low budget. Actually, both of them will be in the next couple of years definitely below the depreciation that Dirk and Markus showed this morning.

So, we are prepared for the future. But let's dive a little bit deeper into the chemistry that you will also see later today in the real assets.

Ram, it starts with basic chemistry.

[Slide 6: BASF operates an integrated polyurethanes value chain]

Ramkumar Dhruva: Yes. This morning, Markus has shown us different value chains. Within the Monomers division, we start with our basic chemistry. We have nitrogen, ammonia and chlorine. And we start building our value chain.

If you look at the polyurethane value chain, for our downstream customers as well as third-party customers, the Monomers division is the key raw material supplier with MDI, TDI, and also PO. As I said, we run our key isocyanate assets at all the integrated sites globally. With these value chains, we build our polyurethane downstream products for internal as well as external customers.

Out of this, 25% of our sales are generated by transfers to the downstream division, which is Performance Materials. But we have also a significant portion of third-party sales. 75% of sales in Monomers come from third-party customers across all regions.

Our strategy to be successful for both internal as well as third-party customers is to have cost-competitive assets and high asset utilization and effectiveness with a focus on sustainability.

Martin Jung: Building on these building blocks and molecules, we start to formulate our formulations. So, the main raw materials are the isocyanates, MDI. There is also propylene oxide that ends up in polyols. And there is adipic acid – it is not on this chart, a different value chain – that goes into polyesters and later on also into systems.

We source 50% of the raw materials in our polyurethane value chain from the upstream division and then we start to formulate – polyols are the differentiating factor – in a polyurethane system. So, we have more than a hundred polyols that we make based on propylene oxide, then also the polyesters. Then we start to formulate and bring the polyurethane systems to the market.

Also, thermoplastic polyurethane is built on the same kind of chemistry, a little bit different processing. Cellasto[®], one of the specialties I will talk about more in detail later on, is also building on the same kind of chemistry.

Again, for us, it's about the application know-how. It is about differentiation, understanding the application and being ready to formulate exactly for that.

Now, let's have a deeper look at what MDI is all about.

[Slide 7: MDI: Versatile and growing]

Ramkumar Dhruva: In the next few slides, we will dive a bit deeper into the key value chains of the building blocks of polyurethane.

Let's start with MDI, methylene diphenyl diisocyanate. MDI is a versatile product and it is growing. If you look at the applications, it is widely used and touches people's lives. It is in the construction industry, the automotive industry and the consumer goods industry, whether that's textiles, footwear or appliances.

The market is generally growing across all regions, specifically in China in the last years. Market growth continues to outpace GDP. In 2024, the global MDI market grew by nearly 300,000 metric tons. In the last five years, the market expanded by more than 18% in total. The global MDI market can absorb one world-scale capacity every year, as long as this growth continues.

The main growth, as I indicated, is in Asia, specifically in China. But with the investments coming up in the infrastructure and construction industry, we expect Europe and North America to see renewed growth in the MDI market.

If you look at our performance in the MDI market in the past years, BASF has grown significantly with volume and capacity expansions. But it is not only on the volume side. We have also improved significantly in terms of value creation for the Group as well as for our Materials segment.

If you look at the future growth fields of MDI, we are investing and doing capacity expansion, as I showed on the first slide with the expansion in North America in Geismar. We would like to double our MDI capacity there to close to 600,000 metric tons, expected to start up in the second half of 2026.

At the same time, we are doing a smart debottlenecking in our Asian plants, particularly in China, both in Shanghai and Chongqing.

It is not only the capacity addition. We are also coming out with new innovations in terms of sustainable products and finding new applications, which I will touch on a little later.

[Slide 8: We have a 50-year history of profitable growth in MDI]

Ramkumar Dhruva: In terms of our MDI story, it all started here in Antwerp 50 years ago. The first MDI plant was started up here in 1975, with about 15,000 metric tons of capacity. Slowly, we expanded both in capacity and regional footprint, first going towards North America, then moving to Asia, starting with Yeosu, then expanding into China. Today, we have a global MDI capacity of close to 2 million metric tons.

And that's not the end. We have the upcoming expansion in Geismar and we are also planning a smart debottlenecking to further expand our capacity in China.

[Slide 9: Innovation and sustainability go hand in hand]

Ramkumar Dhruva: Innovation and sustainability are key to the success of our value chains. Here in MDI, we focus on innovations, specifically sustainable solutions for our customers. Here are a few examples.

One is B2Last. It's a new application of our aromatic isocyanate additive in the bitumen application. This improves road quality and durability, while at the same time enabling lower emissions. Not only that: It enables old asphalt to be brought back into circulation. With this, we have been able to launch new applications for our MDI grades in the last years.

In addition to that MDI application in road paving, BASF was the first to launch a net-zero MDI product – Lupranat® ZERO – in the market a couple of years back.

When developing new applications and pursuing emission reductions, we also look to circularity. In terms of circularity for soft foam recycling, BASF has developed a process and is working together with customers to launch that.

If you have a chance to stay at our René Bohn hotel in Ludwigshafen, you will enjoy sleeping on mattresses that are made out of recycled polyols derived from these old foams.

We continuously focus on process optimization to improve our cash cost position, but at the same time also reduce our CO₂ footprint and ensure the highest level of energy integration. With these, we are positioned with many more innovations, sustainable solutions for MDI as well as other value chains within the polyurethanes business.

[Slide 10: BASF sets global benchmarks for MDI product carbon footprints]

Ramkumar Dhruva: We are not only a market leader in terms of global presence and global MDI capacities. We also believe we set the benchmarks when it comes to product carbon footprint and sustainability solutions for MDI.

This slide shows you our best-in-class product carbon footprint in all the regions where we operate. It is not only that we have the lowest PCF for our standard grades. We also offer low-PCF products, even net-zero products, as I highlighted with Lupranat® ZERO.

This gives us quite a differentiation, both for our internal as well as external customers. Our objective is to nurture our MDI value chain further to ensure that we are growing with the capacity additions at respectable rates, so that we can keep up our market leadership in all regions where we operate.

[Slide 11: TDI: We manage for value]

Ramkumar Dhruva: Next, I would like to talk about another important value chain of PU, which is TDI, or toluene diisocyanate. It is mainly used in flexible foams, particularly in mattresses, furniture and automotive seats, and CASE applications – meaning coatings, adhesives, sealants and elastomers.

TDI is a very difficult market for various reasons. For one thing, the growth of the global TDI market has slowed down in the last years.

On top of that, there have been significant capacity additions on the TDI market, especially in China. This put additional pressure on the TDI value chain. That is the main reason for the currently unfavorable supply-demand balance. Because of the long market for TDI, it will take a couple of years to absorb all the additional capacity.

For these reasons, not only the capacity additions and supply-demand balance, but also the high energy cost in Europe, we made a decision on the optimization of the TDI value chain. We announced the shutdown of our TDI plant in Ludwigshafen in 2023. This was the right decision because we significantly improved our global asset effectiveness, keeping our market share globally at a lower cost base.

Because of that, we are able to be EBITDA positive as well as cash flow positive in a very long market in 2024. With the same setup, we expect to deliver similar results as well in 2025.

Our objective for TDI going forward is to keep our costs in check, maintain our cost competitiveness in all the assets where we operate, make sure we are break-even in terms of EBITDA and cash for the years until we can recover from the long market.

I now hand back to Martin to see how we are able to create value out of this large number of molecules.

[Slide 12: Polyurethane systems]

Martin Jung: Indeed. – If we come back to the world of systems, this is where the magic starts. The chemistry comes into play and you see this myriad of applications of polyurethane systems which have actually made the molecule such a success.

You can formulate a very rigid insulation foam, such as those found in construction or in a fridge or appliances. Or the transportation foams that you find in all kinds of applications in your car, in headliners, in trim, in seating and wherever. Then you find it in footwear and in so-called CASE applications – which stands for coatings, adhesives, sealants and elastomers. These are semi-rigid materials. You see the entire range of applications that is possible.

We are active in almost all of them. That obviously also has implications. One implication is that we have to mimic and understand all the processes that come with it, like a pilot line that we have to simulate applications for our customers in the construction industry, as well as a rotating plate machine that we have in order to simulate the applications of our footwear industry.

So, this is rather intense R&D. Therefore, our R&D intensity is typically between 2 to 3% and we have a Vitality Index of 20+%. So, we turn over one-fifth of our portfolio every five years.

If you look at it, innovation areas are obviously seen in the electric mobility arena, for instance, in battery potting. I have an example here. The voids between the cylindrical cells of a huge battery – these things are as big or bigger than a mattress – are filled with so-called battery potting, a system made with a massive amount of rigid polyurethane.

These are very complicated applications. You can imagine the amount of testing that is done here, runaway situations, and so forth. Typically this is a multi-year project that we do with customers.

But then, on the other hand, you have footwear customers where you have to formulate within a couple of weeks for the new series of an Adidas shoe, for instance. So, there's a huge spectrum. Ultimately, this business is all about complexity management: complexity in assets, in customers, in formulations, in raw materials, in sites and so forth. That is what you have to manage every day in order to come to the best cost position.

Again, as I mentioned before, we have a stable market position with 16% market share, good positions worldwide, the strongest one in Asia.

Interestingly, in terms of customers, this business is rather unique because you have nearly as many products as customers. Our top 100 customers account for only 50% of our sales. We generate the remaining 50% from about 3,500 customers.

So, again, customer management and small customer management is key. As these formulations are very unique to the customers, you don't find a lot of distribution in this market, which is also pretty unique for polyurethane systems.

You've also seen the growth rates. Perhaps an interesting observation here: Typically, the systems market is growing slower than the monomers market, for the simple reason that huge customers start to formulate themselves. That is also exactly the separation that we have between our divisions.

I was asked yesterday: How do you separate your customers? – It's very easy. It is based on the customers' buying behavior. If customers want to have formulation – that means technical service and technical advice – they come to Performance Materials. If they want to buy molecules, they go to Monomers. It's very simple. And we constantly look at our portfolio and reshuffle customers back and forth, depending on their behavior.

[Slide 13: Cellasto®]

Martin Jung: Another very interesting, really exciting product line that we have in polyurethanes is our Cellasto® business. This business generates several hundred million euros for us and it's a tier business to the industry. What we do is: We build so-called jounce bumpers and top mount elements for suspension systems for cars. You see one of them here, a monster. This is part of a suspension system for the Volkswagen MQB, the big platform in nearly all the midsize Volkswagen cars. We manufacture these jounce bumpers that are the ultimate dampening element in a suspension system, or top mounts, which you see embedded here.

We deliver this kind of stuff, even including the aluminum casting here with our toll manufacturers, as a tier-1 supplier to the automotive industry with a lot of success.

We have been doing this for 60 years. We are serving more than 400 platforms and have a market share of more than 50%.

Now, this business – like the entire automotive industry – is obviously growing fastest in Asia. Therefore, we also moved our headquarters for this business in Shanghai. That is also one of the winning factors, I would say, as that business has been now growing at above-market rates because we could enter into Chinese OEM platforms. We were able to serve new needs in electromobility, where the noise level and frequency level is totally different.

[Slide 14: We make polyurethane circularity a reality]

Martin Jung: Now, let's talk a bit about the sustainability side of it. Everybody talks about plastics, microplastics, the sustainability of plastics. I always see it in two parts: On the one hand, the energy side of plastics can sometimes be intense.

A polyurethane system has a product carbon footprint of around 3 kg. A polyamide-6,6 has much more than that. So, it's an important factor.

First of all, we try to bring down the product carbon footprint of our products and systems. The way we do it is: We buy from our upstream suppliers including Monomers. Ram showed that he can produce the best PCF position in the market. Lupranat®ZERO is one example. So, we are able to trim down the product carbon footprint for our systems if we want and if customers are willing to pay for that.

The other part is the important topic of circularity. Again, this has two aspects. It is, first of all, the recyclability of your material. If something today is not recyclable, then many of our customers, particularly in the automotive industry, would start to move away from the material because design for recycling is not possible and design for recycling is becoming an important prerequisite in the markets, predominantly in Europe. But the Asian OEMs are also thinking in this way.

So, recyclability is a ticket to play, also for polyurethanes. Therefore, we spent a lot of time in the last years to demonstrate for all our materials – as Ram showed for the mattresses – that polyurethane systems and materials are definitely recyclable, which is chemically not a trivial feat.

For the second aspect, I'll show you two examples here. One we did with our customer Vitra, an iconic furniture maker in Southern Germany. Many of you might know the fantastic Eames Chair, a design icon. What we did is: We used their post-industrial waste from their manufacturing, remelted it in an extruder process and brought it back in a system. So, what you see here and what Vitra is using is recycled foam. It looks like this. It's a little bit grey.

They brought out an entire line where they also market this feature of recycled soft foam in their furniture. It's very important for them. Therefore, we're very happy to show this.

The second example, which is perhaps not so intuitive, is with our customer for fridges, Liebherr. The German fridge maker is a little bit "niche", they are the leaders in wine coolers. They make very nice fridges and wanted to have recycled content in their fridges.

With Liebherr, we went to scrap yards, looked at the fridges that are collected – actually, in Europe, they have to be collected – and took out post-consumer waste from the scrap yard. We reformulated it in a kind of glycolysis procedure and brought it back as polyol to the fridge here.

So, we showed that in principle, it's possible. It's also a matter of cost, it's a matter of engagement in the value chain. That is important. None of us can do this alone. It requires that you get involved with people that are working with waste, the people that are in sorting, in collection and so forth, and that you establish entire value chains.

If you want to learn more about this, this will be our big theme at the K fair in Düsseldorf next week. We will have super examples, not only from the polyurethane value chain, but also a lot on plastics that we worked on in the last couple of months. You also find some already on LinkedIn.

[Slide 15: Our local production network and strong customer intimacy enables growth in Asia]

Martin Jung: So we touched on the sustainability of plastics. Let's come back to the future of growth. As we've been talking about smart growth and low-asset growth, here we see a couple of examples that show we still selectively invest in things that are really growing.

Here are two of them: We are investing in a new Cellasto® line, currently in India as well as China, to support our customers there. Local content is very sought-after by our customers.

Last year, we also opened a technical center in Mumbai for our Indian formulation customers because it's important to have the know-how on the ground.

Coming back to our Verbund site in South China, we opened our thermoplastic polyurethane line in 2024. In line with what Dirk and Markus said this morning, this startup was extremely smooth, a perfect execution. Now that we've started it up, we're getting into the market.

But also in Monomers, you continue to invest in our growth market Asia.

Ramkumar Dhruva: Of course. I need to keep up with third-party market growth across all regions. So, as I mentioned earlier, we continue to have a smart debottlenecking of our assets in Asia, particularly in China, where the isocyanate market continues to grow. We are implementing similar measures in the coming years to increase and debottleneck our capacities in Shanghai and Chongqing. This puts us in a position to supply our internal demand as well as external customer growth.

In terms of our polyurethane value chain, it's not only about a global presence. We are proud of sustainability and innovation, but there also has to be value creation. So, as Markus alluded to, two important themes of our new strategy are winning behavior and value creation.

[Slide 16: We optimize business steering across the entire polyurethanes value chain]

Ramkumar Dhruva: Every quarter, we look at our performance and benchmark ourselves with our peers in the market: How are we performing? It cannot be a one-to-one comparison directly, but it gives us a benchmark of where we are positioned as a PU value chain within the market segments we operate in.

Here is a comparison of some of the peers that operate in the PU value chain globally. Based on this, I would say we are on a good track to not only deliver significant value, but we also continue to improve our performance over the years.

Our objective is to keep our balance of upstream as well as downstream, focus on asset effectiveness, cost competitiveness and sustainability. Focus on the downstream close-to-customer locations and improve on new innovations and specialty solutions for our customers.

With this balance, we would like to grow our business and also make it profitable and create value for us as a company and for our investors.

[Slide 17: The polyurethanes value chain will make a significant contribution to the EBITDA bsi increase BASF is targeting for 2028]

Ramkumar Dhruva: It's not just value creation. I would like to reiterate the contribution of the Materials segment to the growth of BASF and our commitment in 2028. As was highlighted already by our Board in the last year, we reiterate our commitment to our delivery of the EBITDA bsi in 2028. So, between 2023 and 2028, we expect to earn an additional €750 million to €850 million from the Materials segment, as we continue to grow our business profitably and sustainably.

With this, we conclude our presentation.