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**The exciting work of change:  
Bosch is where the opportunities  
and challenges of transformation converge**

Stefan Hartung,  
chairman of the board of management  
of Robert Bosch GmbH,  
Markus Forschner,  
member of the board of management,  
at the annual press conference on April 18, 2024

Check against delivery.

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Ladies and gentlemen,

It's easy to talk about change. To enact change, however – that's hard, albeit exciting, work. In all modesty, I could also say that exactly this is what makes Bosch an exciting company. This is the place where multiple development paths converge that lead to the future of the economy and society: technological answers to the gargantuan task of climate neutrality, the automation of driving and of factories, and the use of artificial intelligence across all areas. Our range of expertise is so broad that we're not only supporting the transformation in various sectors, we're also helping to shape it – in building and industrial technology, consumer goods, and mobility. In short, Bosch stands at an intersection where the opportunities and challenges of transformation converge – you could also call it a “crossroads,” as we have in our annual report. What paths will lead us to strong growth? Where are we investing in new technologies? What areas are we focusing on? We'll be presenting the answers to these questions today at this annual press conference, to which I would also like to welcome you warmly.

What environment are we operating in from a political, economic, and ecological standpoint? Before I get to that, I'd like to reflect on two points.

- First, we're seeing that climate action is no longer the only issue at the top of the political agenda – especially in the light of complex geopolitics and increasing social tensions in our society. Nonetheless, Bosch is investing heavily in the development of technologies for a carbon-neutral future. This is necessary so that we can be at the forefront of the transformation. We continue to see great opportunities for growth, but some markets are

developing too slowly – that's the case for electromobility, and it's no different for hydrogen and heat pumps. Subsidies for CO<sub>2</sub>-efficient technologies are under pressure, specifically economic pressure. Climate action requires sustained investment from government, from companies, and from each individual. It's expensive – that's clearer than ever. Meanwhile, climate change isn't stopping. On the contrary, it's accelerating. All the more reason why we must not let up in our action for the climate. Not losing sight of such a long-term priority while at the same time maintaining freedom and prosperity – that is the great challenge for the kind of open society we want to live in.

- My second point is that economic and ecological challenges are also putting a strain on the social climate. This can be seen at Bosch as well. For example, the end of combustion engines in new European vehicles is approaching, but we can't simply make up for every job lost as a result with new technologies. Fewer jobs for gasoline and diesel, more jobs for electromobility and hydrogen – there likely isn't enough time for the two sides of this equation to balance out. To remain competitive, we also have to change structures and cut jobs. That's not easy for us to do. We take the concerns of our associates, as expressed in the day of action on March 20, very seriously. In the meantime, our talks with employee representatives have led to some initial results. In principle, we agree with them that we need to reduce costs, but also look for alternatives to job cuts. Furthermore, two key agreements have already been reached. First, we will be strengthening the German locations of the Power Solutions, Electrified Motion, and Cross-Domain Computing Solutions divisions. This year and next, we plan to invest 4 billion euros in machinery and equipment as well as in research and development. Second, between

now and 2027 we'll be spending around 700 million euros on training and qualification for associates in our Mobility business. We're already stepping up our training initiatives to be able to move our workforce from shrinking business areas into growing ones. As part of our People Acquisition Campus and Mission to Move programs, we've reskilled almost 3,000 associates from our powertrain business so far and placed them in new positions. We're now extending these programs to the entire Mobility business sector. And our initiatives reach beyond the boundaries of our company. For instance, we've joined forces with nearly 70 other companies in Germany's Allianz der Chancen, or Opportunities Alliance. We're already involved in labor market hubs at four locations in Baden-Württemberg to move people directly from one job to another. We want to do even more than before to ensure that structural change remains socially acceptable.

Whether from a social or an ecological standpoint, our environment is not an easy one. Under these conditions, we can survive only if Bosch's business remains on a robust footing – this has to be in the interests of all stakeholders. The good news is that we performed better than expected in 2023. But 2024 will be another challenging year. My colleague Markus Forschner will now discuss our current business situation before I continue with a strategic look at the year ahead.

## **Markus Forschner on the business situation:**

### **Good end to 2023, but 2024 will be challenging again**

Yes, Stefan, the 2024 business year will be at least as challenging as 2023, which met our expectations overall thanks to a successful final sprint. I'd like to briefly address the key figures in our consolidated financial statements; detailed explanations can be found in the annual report. What's important to me is the look ahead – especially the economic outlook and the importance of business performance as the basis for our long-term growth strategy.

As a result of the final sprint, EBIT from operations was slightly better than we were expecting when we presented the preliminary figures at the beginning of February. In nominal terms, the Bosch Group's sales increased just 3.8 percent to 91.6 billion euros in 2023. Adjusted for exchange-rate effects, however, the increase amounted to 8 percent and was therefore within the target range of 6 percent to 9 percent for the past year. In sum, we're seeing significant growth. The wide gap between nominal and exchange rate-adjusted growth is due to the unusual economic characteristics of the past year. With a 0.9 percent increase in economic output, growth in Europe lagged behind the global economy's 2.7 percent growth. Nevertheless, high inflation and high interest rates meant that the euro was in demand on the capital markets. The Chinese renminbi also depreciated unexpectedly sharply, which put a strain on us as well.

Thanks to our diversification, however, we were able to balance out weaknesses in submarkets. In Mobility, we benefited from the fact that the market picked up over the course of the year. Sales rose 6.9 percent in nominal terms (10.9 percent after adjusting for exchange-rate

effects), increasing to 56.2 billion euros. Global vehicle production increased by more than 10 percent to 93 million units, which was much higher than expected. The resolution of the chip shortages provided a boost here. Sales growth in Energy and Building Technology was especially strong, increasing 10.5 percent to 7.7 billion euros, or 13.2 percent after adjusting for exchange-rate effects. Here, we benefited in particular from the temporarily high demand for renewable and energy-efficient fossil heating technology.

Sales in Industrial Technology grew by a nominal 6.8 percent to 7.4 billion euros, or by 10.2 percent adjusted for exchange-rate effects, due to the first-time consolidation of the HydraForce and Elmo Motion Control acquisitions. Stefan Hartung will go into more detail about the importance of external growth for our long-term strategy in just a moment. Without these acquisitions, the Industrial Technology business stagnated as expected. The slowdown in the mechanical engineering market was apparent well in advance. Only the Consumer Goods business sector failed to meet its 2023 forecast, due to the weak consumer goods markets. At 19.9 billion euros, sales were down a nominal 6.6 percent on the previous year; adjusted for exchange-rate effects, the decline amounted to 1.2 percent.

We made progress in 2023 with regard to our profitability and financial strength. EBIT from operations rose to some 4.8 billion euros, up from 3.8 billion euros the previous year. The EBIT margin from operations rose to 5.3 percent, up from 4.3 percent. We're getting closer to our target margin of at least 7 percent, even if we are still some way off. This is the target we've set ourselves for 2026. The best 2023 EBIT margins were achieved by Industrial Technology, at 9.1 percent, and Energy and Building Technology, at 9.0 percent. Mobility was able to

grow its EBIT margin from operations to 4.4 percent compared to 3.4 percent the previous year, despite the enormous upfront investments and transformation tasks, while Consumer Goods maintained the previous year's level of 4.5 percent despite the decline in sales.

We've been working very systematically on improving our free cash flow. It came to 2.2 billion euros or 2.4 percent of sales, which is well above our minimum target of 1.0 percent, and is considerably higher than the negative 4 billion euros of the previous year. This is also a sign of normalization. The inventory situation in the previous year was still heavily affected by the uncertainties that followed the Covid-19 pandemic and chip shortages. We are also increasingly focusing on efficiently managing our capital resources so that we may secure additional internal scope for financing growth. This applies to not only inventories and receivables, but above all to liabilities.

We also consistently consider economic viability when making upfront investments, which will total more than 12 billion euros in 2023. Although investments hit a new high of 5.5 billion euros last year, we constantly review our projects and make adjustments where necessary. The same applies to our research and development costs, which amounted to 7.3 billion euros in 2023, leading to an R&D ratio of 8.0 percent.

In 2024 and beyond, we will continue to attach great importance not only to our growth ambitions and the further development of Bosch, but especially to the company's financial performance. This is because we can't expect any significant economic tailwind for the time being. On the contrary: for 2024, we assume that global economic output will grow just 2.3 percent – slower than in the previous year. We also

expect vehicle production to stagnate and the mechanical engineering market to remain weak. There could be a slight improvement in the consumer goods markets after two years of consumer restraint. We also expect our business to stabilize. Contributing to this will not only be innovations, but also the expansion of our international footprint – for example with a new stove factory in Egypt for the African market and a refrigerator factory in Mexico for the North American market.

On the whole, our business figures for the first quarter show that 2024 will be another challenging year. Year on year, the Bosch Group's sales were down by just under 1 percent; adjusted for exchange-rate effects, they grew by nearly 3 percent. This makes it clear that the 5 to 7 percent increase in sales that we are aiming for in our planning for the year as a whole is very ambitious. Our minimum target for free cash flow remains at 1 percent of sales. It will be difficult to increase our EBIT margin from operations compared to the previous year. Not only are we contending with a subdued market environment and the expected further increase in upfront investments for areas of strategic importance, but restructuring and process improvements have a negative impact at first, with their positive effect coming only later. The restrained EBIT forecast also reflects our desire to put measures into place consistently but with a sense of proportion. For example, where possible we're trying to implement the necessary personnel adjustments without compulsory redundancies. Last year, the number of associates rose in all regions, Germany included. At the end of the year, we employed some 429,000 people worldwide – around 8,000 more than in the previous year.



Our challenge is to maintain a balance between improving our profitability and financial strength on the one hand and making the necessary upfront investments for future growth on the other. In addition, some of these upfront investments won't impact sales and earnings until a few years down the road – with considerable uncertainty as to whether and when many of the new technologies will actually become established. It's not our style to drastically cut back on investment in future-oriented areas just so we can quickly achieve target margins. However, we still want to finance from our own resources as far as possible. And that requires a high level of profitability and financial strength. After all, financial independence is highly valuable for Bosch, as it enables the company to pursue a long-term corporate strategy.

**Stefan Hartung on pursuing our strategy:**

**Generating growth from our own resources, through partnerships and acquisitions**

... Thank you, Markus! Our declared aim for the rest of the year is to accelerate Bosch's growth. Specifically, we will continue to strive for two goals:

- The first is annual growth of between 6 and 8 percent, with a margin of at least 7 percent.
- The second is to achieve a competitive position among the top three suppliers in our key markets in all regions of the world.

We'll be able to achieve these goals in the coming years because the transformation of our industries is more than just a major challenge – it also holds great opportunities for growth. We bring to the table in-depth technical knowledge, whether it be in electrification or automation, software or artificial intelligence. Last year, Bosch registered more patents in Germany than any other company, including in the field of AI. Yet as much as we can grow on our own, we'll also expand our portfolio with new and related business areas. These must clearly fit in with Bosch's overall ethos; in other words, they must concern technology that's "Invented for life." We're consistently pursuing our strategy. And we're taking a multi-pronged approach – which has two aspects as well:

- First, investing and disinvesting can be two sides of the same coin. We count both as portfolio management. Our footprint remains broad, but we also need focus. This is why our Building Technologies division is divesting the majority of its product business while expanding its growing business with integrated systems for security, automation, and energy efficiency in buildings. It has almost doubled its sales in North America with the acquisition of Paladin Technologies.
- Second, we're expanding in key business areas not only through acquisitions, but also through partnerships. Both are evident in our semiconductor business. In the U.S., we've acquired the wafer fab in Roseville, California, while in Dresden we're participating with several partners in the European Semiconductor Manufacturing Company, or ESMC for short. In this way, we are flexibly strengthening a business that is of particular strategic importance to us.

Another innovation field with growth opportunities for us is medical technology. During the Covid-19 pandemic, we succeeded in developing one of the world's first fully automated rapid PCR tests. Since then, we've continued to innovate in this area, especially by combining molecular diagnostics with our microsystems technology, or MEMS for short, which we deploy in smartphones and ESP anti-skid systems. The combination allows us to use our Vivalytic analysis platform to create BioMEMS technology. This technology enables precise tests for up to 250 genetic traits such as pathogens on a single chip, and directly at the point of care – in a doctor's office, for example. As recently announced, we're entering into a development and sales partnership with Randox for this purpose – with a joint investment of 150 million euros. One of the first BioMEMS tests we're working on will target various pathogens that cause sepsis, also known as blood poisoning. Furthermore, we can announce another strategic partnership today: Together with R-Biopharm, we aim to develop a fully automated test for multi-drug-resistant bacteria. A joint investment of 150 million euros is planned for this as well. Both these strategic partnerships open up major growth opportunities for us: the market for molecular-diagnostic point-of-care tests is expected to be worth billions. This is technology that is "Invented for life" in the truest sense – technology that can save lives.

## **Bosch Mobility: Successes and opportunities in a difficult environment**

We're also implementing strategic decisions for future growth in our core business. For example, at the start of the year, we responded to the transformation of the automotive industry with the largest reorganization in our company's history: the integrated Mobility business sector. Software, semiconductors, vehicle computers – these strategically important technologies in particular are now being managed across divisions. Moreover, we see business successes and opportunities even in a difficult environment. Allow me to give two key examples:

- The first is electric driving. This year alone, we're launching 30 production projects for electric vehicles. Electromobility is coming; the only question is how quickly it will arrive in the various regions of the world. We estimate that 70 percent of all new cars in Europe will be purely electric by 2030. That figure will likely be 40 to 50 percent in China and North America, where we also expect a considerable proportion of vehicles with high-performance hybrid powertrains by the end of the decade – one in five in North America and as high as one in three in China. Where large vehicles are needed to cover long distances, solutions such as plug-in hybrids and range extenders remain in demand. Electric motors and combustion engines will continue to work together for some time to come, and this, too, offers business opportunities for Bosch.
- The second example is the boost for our vehicle dynamics technology. With new and redundant braking systems tailored to electrified and automated driving, we're growing by 10 percent annually – significantly faster than the market. We're particularly

innovative with regard to vehicle motion management. VMM, as we call it, is a system solution that will coordinate all aspects of vehicle motion by controlling the brakes, steering, powertrain, and dampers. We're early on the scene here, and we'll be putting our first order into volume production this year. Our development teams are working with customers from all three of the world's major economic regions. For the recent winter tests alone, we equipped more than 20 test vehicles from major brands with variants of vehicle motion management. And last but not least, VMM lends itself to an independent software and services business. Software integration on central vehicle computers, the necessary tools and updates, and software maintenance – we can offer our services to support all of this throughout the vehicle lifecycle. Here we're expecting sales worth hundreds of millions by 2030.

At our Tech Day in June, we'll show you how we're driving forward the development of the software-defined vehicle. You are all most welcome to join us for that event. For now, I'd like to take a closer look at another growth area for Bosch Mobility: hydrogen.

### **Hydrogen: On course for the growing electrolysis market**

The good news is, overall we can stick to our growth forecast in this field: by 2030, our sales with hydrogen technology could reach 5 billion euros. That said, the picture here is both dynamic and complex. In 2023, we launched production of fuel-cell systems in Stuttgart, Germany, and Chongqing, China. China will likely be the leading market for the time being; we don't expect to see major growth in Europe or North America until the next decade. From a technical point of view, hydrogen engines represent the fastest path to climate-neutral

commercial-vehicle transportation. Vehicle platforms, production lines, components – everything is 90 percent identical to diesel, and just as robust and powerful, only without carbon emissions. We're also pushing ahead with this line of development. A hydrogen engine with our injection technology will be on the road in India as early as this year, and we're already working on five production orders from well-known truck manufacturers from all three of the world's major economic regions. By 2030, we expect the market for our hydrogen engine technology to be worth almost 1 billion euros.

However, without the availability of the necessary infrastructure and large quantities of H<sub>2</sub>, this area is a nonstarter. But on this, too, the market is moving, and Bosch is at the forefront. By 2030, there will be a good 170 gigawatts of installed capacity for hydrogen electrolysis worldwide – around 25 times as much as today. Up until then, capacity is set to practically double every year. By the end of the decade, the global electrolysis market is forecast to reach 37 billion euros. We're capable of participating in that market, and we intend to do so. Our electrolysis stack is on course for market launch next year. This April, we're building our first functional prototypes, which produce 23 kilograms of hydrogen per hour with an output of 1.2 megawatts. Nearly ready for volume production, these prototypes are already being sent to pilot customers in plant engineering. Bosch will become synonymous not only with hydrogen powertrains, but also with hydrogen production – and for both, we will help shape the future market as a supplier.

## **Heat pumps and more: Growing faster than the market**

We can only hope that this future will also take place in the European Union, where the major goal of carbon neutrality has not yet been followed by a decisive entry into the hydrogen economy. There's no achieving the one without the other. In areas where climate and energy policy are in contradiction, investors don't invest – they wait. And where those policies are erratic, it can also unsettle consumers in their long-term purchasing decisions. This is something we're experiencing in another important growth area for Bosch: the heat-pump market. Over the course of last year, this market collapsed in Germany in the wake of the controversial debate over the country's heating law. Although we expect the market to stabilize around the middle of this year, it will still remain considerably below the previous year's level. Further growth requires a clear and predictable subsidy policy. The heat-pump market stagnated across Europe in 2023, while our business grew by almost 50 percent. And we anticipate that we will continue to grow significantly faster than the market in the years ahead. To this end, we've not only invested in our production, but also expanded our product portfolio. It encompasses cost-effective as well as quiet and efficient heat pumps; we also offer powerful models for larger buildings. And, finally, we're banking on hybrid heating systems: a combination of a heat pump for basic operation and a gas-fired boiler for peak loads. This technology will enable the efficient decarbonization of millions of existing buildings; we're initially debuting it as a solution for apartment buildings with up to 100 residential units. Now that we're past last year's consumer uncertainty, the move to alternative heating is coming. And it remains a business opportunity for Bosch that we can leverage better than other players.

Even when we have to react to market changes in the pursuit of our growth strategy, we've made progress. In our Industrial Technology business, we're less concerned with political hurdles than with a weakened mechanical engineering sector. However, the acquisitions made by our subsidiary Bosch Rexroth are bearing fruit: HydraForce in North America for compact hydraulics, Elmo Motion in Israel for factory automation. In both areas, we're growing faster than the competition. With compact hydraulics, we've also achieved a leading market position globally. In factory automation, we're profiting to no small degree from an innovative software solution that is virtually an entry ticket to the hardware business. This solution is an open control platform that we call ctrlX AUTOMATION. Since its launch four years ago, the number of customers has increased sevenfold to some 1,500. Sales in this area increased 30 percent in 2023. More than 100 partners contribute their strengths and solutions to ctrlX AUTOMATION – currently the fastest-growing ecosystem in factory automation. Bosch Rexroth is making progress through partnerships and innovations as well as through acquisitions.

### **The continuity of Bosch culture: Social partnership tolerates controversy, but needs compromise**

Ladies and gentlemen, it's not only our business areas that are growing, but also the challenges we face in times of industrial transformation. I can't deny that some decisions are painful. But as we draw to a close today, I want to address the issue of continuity and change in the Bosch culture. Even during Robert Bosch's lifetime, this culture always included both future and result focus on the one hand and fairness on the other. Anyone who reduces our company founder to a proponent of just one of those is misrepresenting him for political



purposes. Yes, Robert Bosch practiced social partnership before the term even existed. But even in his day, that didn't preclude controversy, or even labor disputes. What was important to him was that the parties came to a consensus thereafter – agreements were reached then, and they're also reached today, as we're currently seeing in our constructive discussions with the employee representatives. Social partnership doesn't just mean social harmony; it can and must also be a hard-fought struggle to balance economic and social interests. This is at least as challenging now as it was during Robert Bosch's lifetime, as we also have to take ecological necessities into account. This has made the situation more complex, and compromises aren't getting any easier. But we want to find such compromises with our associates, and we will. Social partnership is particularly important in difficult times.