



**BOSCH**

September 6, 2021  
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**Bosch is shaping the CO<sub>2</sub>-free future:  
climate-friendly and attractive solutions  
for all kinds of mobility**

Dr. Volkmar Denner,  
chairman of the board of management, Robert Bosch GmbH,  
and Dr. Stefan Hartung,  
chairman of the Mobility Solutions business sector,  
at the IAA Mobility press conference  
in Munich, September 6, 2021

Check against delivery.

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Ladies and gentlemen,

This year's IAA comes at a time when the automotive industry is facing a challenge on three fronts. To put it briefly, these are the Covid crisis, chip scarcity, and the path to CO<sub>2</sub>-free mobility. In this challenging environment, we are holding our own and seizing our opportunities. Together with our customers and suppliers, we are doing all we can to overcome the chip shortages, not least by ramping up our new wafer fab in Dresden. The sales revenue of our Mobility Solutions business sector will grow nearly 10 percent this year. We are a technology leader, and this means business success. This is the foundation that will get us through the next steps in the transformation of mobility successfully. We are not just following this change, but shaping it side by side with our customers. And this is why we are growing – above all in the areas that will shape our future. In 2021, we will grow more than 40 percent with systems and sensors for driver assistance. Our electromobility sales will expand twice as fast as the market. This year, they will already exceed 1 billion euros, and by 2025 they will come to some 5 billion euros. Electromobility will become a core business for Bosch, and CO<sub>2</sub>-free mobility a growth area. We are turning challenges into opportunities – that's how we do things at Bosch.

In this context, we see ourselves as a proactive company that shapes the future. We are innovation leaders, especially when it comes to the mammoth task of reducing greenhouse gases from road traffic. The success of our e-bike business shows how much we are capable of – and this in a market that is currently expanding rapidly. In Europe alone, growth is 35 percent. Our innovations have helped e-bikes achieve a breakthrough. Our first e-bike drive debuted in 2011, and was followed in 2014 by the first cycle computer to feature integrated

GPS, and in 2018 by the first e-bike ABS. Innovative strength can create new markets.

Our aim is to shape the mass mobility of the future. In the future as well, therefore, there will not be any car without a bit of Bosch in it. A 55 percent reduction in the CO<sub>2</sub> emissions from new vehicles by 2030, and 100 percent by 2035 – we will go along with these ambitious targets set by the EU Commission. The mobility of the future must be climate-friendly, but it also has to be affordable and attractive. Only in this way will people and freight stay mobile in the future as well. The approach we take here is a technology-neutral one. What this means is that we have the right solution for every application, tailored to fit the respective policy requirements. No other company in our industry can match our broad diversification – from bicycle drives to construction machinery. We can therefore draw on all the technology we need to benefit from segment shifts in the market such as the current boost being given to electromobility in Europe.

That said, there are still some unresolved questions as concerns the electrification of driving – such as the expansion of charging infrastructure and CO<sub>2</sub>-free electricity. In this case, statements of intent are not enough. We also need concrete steps. This is a task for industry and politics in equal measure. Our common goal must be to maintain a balance between economic, ecological, and social concerns. For passenger cars, the EU Commission has set a clear course toward electromobility, and now the transformation of the automotive industry has to work. The tight deadlines that have been set will not make this easy. The decisive factor will be acceptance of these ecological goals by as many people as possible, including our own workforce. For this purpose, we are investing in training and re-skilling programs. This is part

of our entrepreneurial responsibility. But policymakers that set such strict technological standards also have a duty to preserve jobs in our industry and make mobility affordable.

But how will we benefit from the booming new business in electromobility? My colleague Stefan Hartung will go into this in more detail...

### **Electromobility: our next success story**

... Many thanks, Volkmar! As you just said, diversification is our strength. In electromobility as well, no other company offers as many options as Bosch, from e-bikes to 40-ton trucks. We pave the way for electromobility, whatever the application. And we are confident that electric driving will be the next chapter in the Bosch success story. But to repeat once more: the pace of business developments is one side of the story. The other is the transfer of our associates to this new field of business. Both have been happening at our locations for some time now, but change takes time, and time is especially tight when it comes to the climate emergency. This makes it all the more important to win people over to sustainability. Climate action isn't just a question of ecology. We have to think about the social climate as well.

For electromobility, we have already made upfront investments of 5 billion euros. This year alone, we will spend another 700 million euros. In the end, by making these investments, we anticipated the accelerated ramp-up in the European Union. And we are preparing for increasing demand across the globe. By 2035, it is expected that 60 percent of all newly registered vehicles worldwide will be electric cars.

But Bosch sees electromobility in terms of technological alternatives. More precisely, we are investing in battery-electric powertrains, but also in fuel-cell powertrains. We believe that the type of application makes a difference. Especially in heavy trucks and long-haul transport, fuel cells are the first choice. In this area, we are involved in customer projects in China, the United States, and Europe. The first trucks featuring our technology are already on the road in China.

When it comes to battery-electric mobility, no other company is working in as many different areas as Bosch. We are helping it to a breakthrough with all kinds of solutions. We supply silicon carbide chips that can improve the efficiency of the battery powertrain by as much as 6 percent. And on the subject of efficiency, our integrated e-axles cannot be beaten. Last not least, we offer drivers access to a network of 200,000 charge spots in Europe. Finding the way to the nearest vacant charge spot and paying without hassle is child's play – thanks to our internet-based charging service.

We believe it is essential to make everyday electric driving easier. On this subject, the cable we are premiering at this year's IAA is the first to allow cars to be recharged from a regular power socket without the need for a heavy control box. Sustainable mobility should also be uncomplicated – this is the only way it will gain acceptance. With our products and services, we will help electromobility achieve a breakthrough. With our profound knowledge, we are among the frontrunners for all automotive systems, as our show car here at our booth demonstrates. Not least, this is the basis from which we will help bring about automated driving. For an outline of this promising future business field, I will now hand back to Volkmar Denner...

## **Automated driving: we are upping the pace**

...This is also an area in which we are making progress, ladies and gentlemen. More specifically, it is through driver assistance that we are paving the way for automated driving. Here as well, Bosch is the company for pioneering achievements, from electronic skid control to automatic emergency braking. We are continuing to pursue our “vision zero” – a vision of no more road deaths. Driver assistance makes driving both safer and smoother. This success story is now being continued with new assistance functions for passenger cars. Thanks to Bosch technology, for example, drivers will be able to take their hands off the wheel. We are the market leader in driver assistance, and will grow faster than the market in 2021 as well.

Bosch is proficient in all the disciplines needed for automated driving. We pursue a strategy of supplying all the essential elements from a single source: domain control units, sensors, and connectivity. More than 5,000 engineers are working on these areas at Bosch, with more to come. In terms of patents, we are among the frontrunners worldwide – in 2020 alone, we added roughly another one thousand patent applications. When it comes to automated driving, therefore, all roads lead to Bosch. And we are not letting up. One future focus will be on applications in logistics. Driverless trucks moving around distribution hubs – this too will be possible with Bosch on board.

However, it will be with driverless parking that everyday automated driving will start. Here again, Bosch is among the frontrunners, and has set standards with pilot projects in Germany and the United States. Above all, the automated valet parking being demonstrated at this year’s IAA is made by Bosch. The key feature here is our idea of a link

between vehicles and fixed video cameras in the parking garage. We used our security systems expertise to develop the cameras. Over the next few years, driverless parking will become established in parking garages. Bosch is already working with Mercedes-Benz and other partners on deploying this function in a production vehicle – a world first. In the parking garage at Stuttgart airport, a smartphone command will send cars to their park bay. The new Mercedes-Benz S-Class is the world's first production vehicle to feature the technology needed for this. Other models will follow, from diverse automakers. By 2025, we expect that several million vehicles and some 1,000 parking garages worldwide will be capable of automated valet parking.

### **Vehicles as internet nodes: our software expertise**

With functions such as these, ladies and gentlemen, a prediction we made ten years ago is coming true: the vehicle is becoming an internet node. From the car to the cloud – only Bosch is active in all domains of software development. In this connection, we are also collaborating with Microsoft. The software-dominated cars of the future will need companies like Bosch – companies that are equally at home in the world of automotive electronics and of the internet of things, with which cars are connected. These vehicles will have to be equipped with a new electronics and software architecture – and we can supply it. Even the bicycle is becoming part of the internet. Here at the IAA, we are showcasing our new eBike Flow app, which allows the software in our components to be updated, for example. Nearly half the R&D associates in Mobility Solutions are now software engineers.

Not least, this is our response to the reshuffling of roles in our industry. More than ever, automakers are developing their own software and

employing specialist software and chip suppliers. This means all the more demand for software integration, to ensure that the modules from various sources are compatible in all models. Bosch also has this integrative expertise. Take infotainment computers: they are the most software-intensive systems in a vehicle, and their computing power and software complexity will have doubled once more by 2025. The share of integrated third-party software is especially high here, and can be as much as 90 percent. And here as well, we will post well above-average annual growth of 25 percent between now and 2025.

With all our solutions, ladies and gentlemen, we will help shape a new era of mobility, true to the motto displayed at our IAA booth.