

**Opening remarks from Klaus Meder, President and Representative  
Director of Bosch Corporation, Japan**

Hello everyone. Thank you for joining us today for our annual press conference. I am delighted to have the opportunity again this year to share our results and latest topics with you.

This year, Japan has significantly eased the COVID-19 prevention guidelines. Accordingly, we have left the wearing of masks at our sites to the discretion of each associate. After such a long time, I am enjoying increasing opportunities to see the facial expressions of our associates when I talk with them. Our premises throughout Japan are filled with energy now. As daily life and business gradually return to normal, I expect that this will be a year full of progress for us.

On the other hand, in 2022, we faced many challenges: the rapid expansion of the omicron variant, the war in Europe, rising prices and energy costs, as well as inflation. These have directly impacted the lives of many people all over the world, and this also has affected our business.

Now, I would like to introduce the major initiatives we have taken to address the various challenges that are occurring throughout the world. In recent years, many countries and regions have implemented a variety of policies to achieve a decarbonized society. Among them, the European Union has been one of the first to set ambitious goals to lead the world in combating climate change and has announced various environmental regulations for the automotive industry. This has influenced environmental regulations in many countries around the world, including Japan. These environmental regulations involve high technical requirements. However, Bosch is constantly focusing on development in order to provide the best solutions for each customer's needs while meeting high requirements. As a result, Bosch's powertrain solutions, for example, range from gasoline, diesel, hybrid, battery EV, to fuel cell electric vehicles. This ensures a competitive advantage in the market. We will present more about this broad portfolio later in this presentation.

Furthermore, our development capabilities are not limited to the automotive industry. In European energy policy, heat pumps are a key technology for achieving the European climate targets. A heat pump is a climate control technology that collects heat in the air and carries it into or out of a room. This technology is in high demand as it can significantly reduce CO2 emissions compared to burning fossil fuels such as gas or oil. In response to this high demand, our heat-pump sales grew by 54 percent globally in 2022. For the European heat-pump market as a whole, annual growth of roughly 20 percent is forecast between now and 2025. Therefore, Bosch recently announced that it will invest more than one billion euros by the end of the decade. This includes investment in a new heat pump

manufacturing plant that we plan to build in Poland. Bosch will continue to offer a variety of solutions throughout our businesses, from climate-friendly air conditioning solutions to its core mobility business and will respond to the energy crisis occurring around the world.

At the same time, Bosch has been approaching sustainability by making progress in 2022 towards our climate targets. Last year, Bosch has reached already nearly half of the 1.7 terawatt-hour energy-saving target we have set ourselves for 2030. In 2022, Bosch locations worldwide were able to increase the share of renewables in their electricity consumption from 89 to 94 percent. We are also promoting initiatives at our sites in Japan. A portion of the energy supply at the Tochigi, Musashi and Tsuchiura plants have already been replaced with green energy generated from hydropower in 2022. And, from January 2023, we have taken similar measures at our Higashi-Matsuyama and Yorii plants. In December 2022, we completed installation of solar panels at the Higashi-Matsuyama plant and started generating electricity. From the first half of 2024, we plan to install solar panels at our Tochigi plant as well.

In this way, Bosch will continue to provide a wide range of solutions to our customers under our corporate ethos "Invented for life." At the same time, we take all possible measures within the organization to implement initiatives to achieve climate neutrality.

Now, Christian Mecker will present our figures both globally and in Japan, as well as our outlook for 2023.

### **Bosch Global sales in 2022 from Christian Mecker, the Executive Vice President and Member of the Board of Directors of Bosch Corporation**

Thank you, Klaus. Hello everyone. I would like to offer a warm welcome to you as well. For the Bosch Group in 2022, all business sectors were able to increase their sales. The Group generated total sales of 88.2 billion euros. Sales thus increased some 12 percent over the previous year, and EBIT (earnings before interest and taxes) from operations reached 3.8 billion euros. At 52.6 billion euros, the biggest business sector, Mobility Solutions, once again generated the highest sales in 2022.

### **Bosch Group sales in Japan in 2022**

In 2022, the third-party sales in Japan reached 340 billion yen. While vehicle production in Japan remained flat, Bosch achieved a double-digit growth of 15% year-on-year. Sales benefited from our wide product portfolio, from existing products such as ESP®, to the latest solutions such as infotainment systems and iBooster, which we started manufacturing in Japan last year.

In 2023, there are still some challenging factors affecting the global economy, such as

increasing prices and energy issues. However, the Bosch Group in Japan has made a good start, with first-quarter sales exceeding that of the previous year. For the full year, we expect to achieve double-digit growth.

**Reorganizing the mobility business to meet market needs: Bosch's cutting-edge technologies drive future developments in mobility**

Now, let us move on to our strategy and innovative technologies in our core business, the automotive industry. The automotive industry has experienced rapid changes in market requirements in recent years. This will affect how we think about mobility and how vehicles are developed. Our customers are shifting from being companies that make vehicles to companies that create a mobility society. Here, I want to show our view of the market and customer expectations from a technology perspective. We see five major domains in future vehicle architecture: ADAS, motion, energy, body & comfort, and infotainment. At the same time, vehicles are becoming increasingly connected, not only to our personal devices, but also to the cloud. All of this is making software increasingly important. Vehicles of the future will have new overarching operating systems as a basis for running individual applications. This means that software functions will no longer be tied to specific hardware, similar to a smartphone.

For us, these changes require a high degree of flexibility and cross-domain collaboration, and at the same time offer many new opportunities. Bosch is realigning its mobility business to respond to the changes. By doing so, we will be able to serve customer needs even better and faster with customized solutions from a single source.

Tomorrow's drivers will expect their vehicles to be fully integrated into their digital world. In the era of software-defined vehicles, new functions are primarily realized through software. Bosch provides tailored software solutions at all levels to help our customers develop intelligent and attractive vehicles more efficiently.

Leveraging both our software and vehicle know-how, Bosch can support customers in developing new functions on the basis of application software. Vehicle dynamics control 2.0 is a prime example of this, incorporating an innovative control concept that allows the function to “think ahead.” Vehicle dynamics control 2.0 uses the principle of feedforward control to predict the desired behavior of the vehicle according to the inputs of the driver. And it operates the respective actuators such as braking, chassis, steering, and powertrain systems in a targeted manner. In this way, the driver perceives the behavior of the vehicle as natural and in accordance with their intentions.

Bosch plans to start series production of next-generation ESP® with vehicle dynamics control 2.0 in the second half of 2023. Prior to this, in Japan, we had a winter test of a prototype with next-generation ESP® at our Memanbetsu Test Course for our Japanese

customers this February. Our customers enjoyed a comfortable driving experience during the brake test, even though it was conducted on slippery winter roads covered with snow and ice. Bosch is continuing to conduct such tests and we are working with several Japanese customers to develop next-generation ESP® with vehicle dynamics control 2.0.

I would like to introduce another example from our latest initiatives related to software. Bosch is promoting “Mobility System Architecture” to realize a software-defined vehicle. With a software-defined vehicle, the vehicle will be connected to the Internet making it possible to update onboard software and add new features even after purchase of the vehicle. Accordingly, every customer, supplier, and software company are working on the development of software-defined vehicles. However, currently they are developing application software according to their own standards and rules. This will lead to enormous development costs. Another issue is the low re-usability, such as the inability to apply similar technologies to other vehicles or connect with other services. To realize software-defined vehicle, it is necessary to think beyond the current E/E architecture that is confined to the vehicle itself.

Therefore, Bosch is responding to this challenge by taking the concept of automobile architecture beyond the vehicle. Bosch is advocating what we call, “Mobility System Architecture” or MSA that extends to the cloud. This architecture defines the system structure and the data flow model. Let’s say a vehicle of a certain OEM slips on a road. If information on the location and time of the slip is shared in the cloud to drivers of nearby vehicles, they can drive to avoid that road. However, if OEMs develop software that shares information based on their own standards and rules, information about slips is limited to vehicles of the same OEM. But road traffic information such as slips, or accidents should be shared with nearby vehicles, administrative bodies, and consumers to inform them of the dangers and support a safe living environment. Therefore, it is important that MSA defines the system structure and data flow for sending slip information, and standards are established accordingly. That makes it possible to seamlessly share information of the location and time of a slip with vehicles of other OEMs. This will dramatically reduce the development time and cost for functions of "sharing slip information with other vehicles." Instead, OEMs can focus on developing their own functions such as “how to inform the driver of the information or how to display it as infotainment.” This is not limited to software development for OEMs. The spread of the MSA approach will promote initiatives for open standardization of application software design and implementation methods. This will make it easier not only for OEMs, but also for suppliers and mobility service providers to develop highly portable software applications. As a leading supplier in the automotive industry, Bosch is actively promoting this kind of advanced initiative.

In addition to these software initiatives, Bosch also offers solutions for the electrification of vehicles, which is a focus area for customers to realize a decarbonized society. Bosch has

a broad portfolio of products available to customers, ranging from individual sensors, electric motors, power electronics and electronic control units to integrated solutions such as the eAxle, right through to pre-integrated modules. Bosch is also contributing to development of commercial vehicles, where electrification is advancing. Last year, Bosch started production of the Electric Drive Module (eDM), a new drive unit that integrates an electric motor and inverter for electric light commercial vehicles. The unit has already been equipped in a commercial vehicle model from a Japanese customer since 2022. The eDM helps to save weight and space in commercial vehicles by integrating the drive unit. Moreover, the flexible construction allows for easier integration with the drive module, making it possible to bring light commercial vehicles to the market in a shorter period of time. For commercial vehicles, CO<sub>2</sub> emissions differ greatly depending on driving profile, payload, and driving distance. For example, light vehicles tend to drive shorter distances in Stop & Go on downtown delivery routes, while heavy-duty trucks transport goods and merchandise over long distances. Bosch offers the most suitable powertrain solutions for every commercial vehicle, whether gasoline, diesel, natural gas, battery EV and fuel cell to meet a wide range of requirements. Moreover, Bosch is conducting research and development not only on fuel cell vehicles, but also on hydrogen engines. We believe that battery EVs are more efficient for light commercial vehicles used within cities, while fuel cell and hydrogen engine vehicles are more efficient for long-distance transportation, such as heavy-duty trucks. Based on the knowledge and experience of contributing to commercial vehicles, Bosch will continue to support the electrification of commercial vehicles.

Our contribution to electrification covers more than just road vehicles such as passenger and commercial vehicles. We are also supporting to electrify off-highway vehicles. Bosch's subsidiary, Bosch Rexroth, provides products and solutions for industrial hydraulics and electric drives for power excavators used on construction sites. In Japan this year, Bosch Rexroth will launch an eLION motor to support the electrification of off-highway vehicles. Please picture a large hydraulic unit, such as the arm of an excavator. When an eLION motor is combined with electro-controllable hydraulic equipment which drives an excavator, the fine movements of the excavator's arms and other parts can be set by software. The arm section of an excavator can be set up to carry out fine movements, such as excavating and levelling, enabling the replication of advanced human skills. Japan's construction industry has been facing issues such as long working hours and labour shortages for many years. Moreover, an aging of the workforce and decline in the number of young workers is creating an issue that advanced construction skills are not able to be passed on. Furthermore, from April 2024, the construction industry will also face workstyle reforms limiting maximum working hours. The industry is facing an urgent need to respond to this "2024 Issue," which will make its problems even more severe. With the eLION, Bosch is contributing to the electrification of off-highway vehicles and will also contribute to resolving the 2024 issue for the construction industry.

### **New headquarters and R&D facility to be completed in 2024: Strengthen synergies among associates and the development system**

So far, I have presented examples of how Bosch is addressing social challenges with innovative technologies that benefit people and society. However, these are just some of our initiatives. Bosch is constantly adapting to change and seize opportunities for growth. Reorganization of the Mobility Solutions business that I just presented was part of these changes.

And for the organizational change, it is important to enhance synergies among associates and strengthen the development system. In Japan, we believe that our new headquarters and R&D facility, scheduled for completion next year, will play an important role in this. Klaus will now give updates on the new building.

The year 2024 will be a memorable year for the Bosch Group in Japan. The new headquarters and R&D facility currently under construction in Tsuzuki Ward, Yokohama will finally be completed. The new building will bring together the divisions and group companies that are currently scattered across several locations in the Tokyo-Yokohama area. The new building is also located about two kilometers from the existing R&D facility, also in Tsuzuki Ward, Yokohama. The two R&D facilities, the current and the new one in Tsuzuki Ward, will house more than 40 percent of the Bosch Group's workforce. This will further strengthen the development structure in Japan by increasing collaboration and cooperation between the divisions at the two locations. Through the development of the new headquarters and R&D facility and the reorganization of the Mobility Solutions business, Bosch will be able to respond more quickly to the increasingly diverse and complex needs of its Japanese customers.

Furthermore, we are constructing the Tsuzuki Ward Cultural Center, on the premises of the facility, based on the specifications set by Yokohama City. Bosch has proposed the nickname "Bosch Hall" to Tsuzuki Ward for the center. And Bosch was selected as the preferred bidder for the naming rights and is currently finalizing the contract. The all-weather plaza between the new Bosch building and the cultural center will be used to plan and implement cultural events and programs. This will be in close cooperation with a designated management company to be selected in the future through public solicitation by Yokohama City. Bosch intends to foster a synergistic liveliness between the new building and the cultural center, thereby revitalizing the local community.

Construction of the new headquarters and R&D facility is progressing smoothly. This picture shows that overall structure is already completed. The exterior façade and a portion of the interior is underway. The new building is designed to stimulate communication across business divisions. The office area is divided into three areas on each floor, allowing associates to choose their location according to their purpose.

The "Communication Zone" for active communication among associates, the "Agile Zone" where the space can be used flexibly, with movable walls to meet the needs of projects, and the "Individual Zone" for concentrating on individual work. In addition to the full-scale lab in the basement, small to medium-sized labs are located in the center of the office floor, allowing associates to view the activities of other departments. The building is designed with two atrium openings to increase vertical connections within the building. This promotes dynamic collaboration and allows natural light to enter the floors. The new office environment will further develop a work style that encourages collaboration.

### **Sustainable working styles ensure Bosch remains an employer of choice**

When it comes to work style, the work style in the new facility represents our corporate culture. We value our corporate culture that respects individual associates. And we believe that the diversity that comes from this respect is an asset for the company. We always encourage associates to find the place where they can best perform, and to find a work-life balance by adopting their work to their lifestyle. This approach is based on "Smart Work," which we introduced last year. It is a hybrid workstyle where the ratio of work at the office and remote work is decided flexibly by each team. We do not make it mandatory company-wide, for example, to "come to the office three times a week." Each team can decide the best way to work by discussing it within their team. So, when it comes to the office, the key is communication among associates. Communication and collaboration between people will increase engagement and generate creative ideas. The new facility is also designed to encourage communication among associates, while enabling them to work in the most suitable way. This shows how Bosch has been working on measures to encourage flexible and diverse workstyles for associates.

In April this year, we introduced "Coreless Flexible Workstyle." This eliminates core hours for associates working under flexible work arrangements. Associates can set their working hours on operating days flexibly as long as they meet the required monthly working hours. This means that even associates working on a fulltime basis can adjust their own working hours such as taking three days off per week. For instance, an associate can choose to work two hours longer than usual on four days of the week, Monday through Thursday, and not to work on the fifth working day, which makes three days off possible from Friday through Sunday.

Furthermore, we revised our guidelines on side jobs in November 2022. We have allowed associates to have side jobs since 2016. But as new and more flexible workstyles expand, there is a need for even more supportive work environments. Now, our associates can run their own businesses or work as independent freelancers for up to 30 hours per month in principle.

Moving forward, Bosch will continue to promote flexible and diverse work styles and a comfortable work environment so that associates can realize sustainable working styles.

### **Conclusion**

In today's annual press conference, we have talked about some of our latest technologies and initiatives in Japan. Bosch has always focused on development of the latest technologies to respond to ever-changing and diversifying market environment and customer needs. Furthermore, the group-wide reorganizing of the Mobility Solutions business and the opening of the new headquarters and R&D facility in Tsuzuki Ward, Yokohama, will further strengthen Bosch's R&D operations in Japan and help respond to the needs of customers in Japan more swiftly and accurately than ever before.

Thank you for your time and now I am looking forward to having your questions.

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