

Media Information  
22 October 2021

## **BMW Group Plant Munich goes fully electric**

+++ Plant Munich launches production of the fully electric BMW i4  
+++ At least half of all cars from Munich plant will be electrified by 2023  
+++ Project for emission-free transport logistics in home plant gets under way  
+++ Nedeljković: “BMW i4 is a milestone on the road to electric mobility.”

**Munich.** The first series-produced BMW i4 has today rolled off the production lines at BMW Group Plant Munich. The company’s home plant now manufactures all drive variants on a single assembly line. “For the plant and team, the launch of the BMW i4 is a milestone on the road to electric mobility,” said Milan Nedeljković, BMW AG Board Member for Production. “By 2023 more than half of all vehicles from our Munich facility will have an electrified drive. The majority will be fully electric. So Munich goes fully electric.”

Setting up production of the fully electric BMW i4 in the confines of the almost 100-year-old plant, the conversion and installation of systems proved particularly challenging. “We succeeded in integrating the new vehicle into our existing systems without halting production. The team and our partners did an amazing job,” added Peter Weber, Director of BMW Group Plant Munich. Space constraints notwithstanding, existing systems were removed, and new ones installed and ramped up. “Our bodyshop is a shining example of intelligent, efficient integration. Most of the new production processes for the BMW i4 can be carried out on the existing bodyshop systems,” Weber explained.

### **Integrating electromobility into series production**

The main difference between the BMW i4 and conventional architectures is the electric drive and high-voltage battery. About 90 percent of the existing systems in the Munich bodyshop can still be used for the new model.

Additional ones were required only for the floor assembly and rear end.

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Another highly complex topic was the integration into assembly of the high-voltage battery. The battery pack is now bolted onto the body by a new, fully automated battery assembly system that works from below. Fully automated, high-resolution camera systems scan it thoroughly beforehand to ensure the surface is absolutely clean and there are no impurities that could cause damage.

The BMW Group's home plant now manufactures an extensive portfolio of products, comprising not only the BMW i4 but also the combustion-powered and hybrid BMW 3 Series Sedan and Touring, the BMW M3 and the BMW 4 Series Gran Coupe. The scope of production is a testament not only to the plant's flexibility but also to the outstanding skills of its associates.

### **Digitalisation is progressing**

Increasing digitalisation plays an important part in BMW Group production. The whole of Plant Munich is currently being 3D-scanned in minute detail to obtain a full set of basic digital data of both the building and its systems. The scans are then processed and saved on the cloud so the data can be accessed from anywhere using an intuitive, browser-based tool. Several plants have already been fully 3D-scanned – Spartanburg and Regensburg among them – and Plant Dingolfing is undergoing the process at the moment. By the end of 2022, the structure of all the major car plants in the BMW Group production network will have been scanned, and digital data will be available for everyone.

The BMW Group already utilises virtual planning tools to plan buildings and systems today. Axle pre-assembly for the BMW i4, for example, was planned with the Omniverse Nucleus platform, by NVIDIA. This converges data from the design and planning tools of various producers to create photorealistic real-time simulations in a single collaborative environment. The data from the 3D scans is also fed into the Omniverse platform.

Other digital applications are used directly in production. Radio frequency identification (RFID), for example, allows parts to be identified and assigned contactlessly and automatically along the value chain, eliminating the need for manual scanning and ensuring the right one is fitted to the right car. RFID technology is already in use in seat production but has also made its way into various areas of vehicle assembly at Plant Munich. The smart labels required for it are attached to parts while they are still with suppliers or in BMW Group component production, ready for use in assembly. They are then picked up by line-side antennae that track every labelled component in every car. Digitalisation of this kind makes processes faster and more secure, and enhances efficiency and quality as a result.

**Reverse osmosis system cuts water consumption by six million litres**

Within the production system, the issue of sustainability is of fundamental importance, and the BMW Group has adopted a holistic approach to reducing CO<sub>2</sub> emissions and minimising the use of resources. Between 2006 and 2020, resource consumption per car produced fell more than half, and CO<sub>2</sub> emissions have dropped even further, by 78 percent. The aim is to reduce CO<sub>2</sub> emissions per vehicle produced by another 80 percent by 2030. At Plant Munich some changes have been made and a series of new measures implemented. That's why the plant now uses reverse osmosis to cut freshwater consumption. The system was integrated into production in the spring of this year and now treats water from the cathodic dip – where the base coat is applied to vehicles – so it can be re-used for the same stage of the process. The new system is expected to reduce total annual freshwater consumption by more than six million litres. Since 1997, BMW Group Plant Munich has been using groundwater from its own source on the plant campus. This provides enough to cover about half of the plant's annual needs and makes a significant contribution towards saving valuable drinking water.

**New sustainability target: zero local emissions from transport logistics**

With a particular focus on reducing CO<sub>2</sub> emissions, the BMW Group has also announced another goal to coincide with the production launch of the BMW i4: over the next few years, local emissions from transport logistics at Plant Munich will gradually fall to zero. This will be achieved mainly by making greater use of rail transport and battery-electric trucks. At the moment more than 750 truck deliveries are required daily for the delivery of parts. In the future the inner-city stretches of these journeys will be made by electric trucks. In addition, the share of vehicles leaving plant Munich by train will gradually increase from the current 50 percent. The ultimate aim is to eliminate emissions completely from transport logistics in the Munich area, but also to bring about significant cuts within a broader radius and from intercontinental transportation.

Peter Weber, Director of BMW Group Plant Munich: “We are well aware that, owing to the city location of our production facility, we have a special responsibility. Our project to reduce CO<sub>2</sub> emissions at our home plant will have a major impact that’s positive both for the environment and for our immediate neighbourhood.”

Since last year, all the energy sourced worldwide by the BMW Group has been green. For production of the BMW i4, for example, the environmental credentials of green energy were further enhanced by sourcing it directly from regional hydro-electric power stations. Furthermore, starting this year, the BMW Group is offsetting its remaining (Scope 1 + 2) CO<sub>2</sub> emissions from production. These are caused by combined heat and power generation and are fully offset worldwide with relevant carbon credits.

**The transformation and future focus of the home plant continue**

The integration of the BMW i4 into existing production structures came at an investment of €200 million. The i4 is an important trailblazer for the Neue

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Klasse, due for rollout in Munich and other plants around the middle of this decade, and designed purely for electric powertrains.

The BMW Group first announced its plans to upgrade Plant Munich for electromobility less than a year ago: new vehicle assembly and bodyshop facilities were to be constructed, and engine production was to relocate to other parts of the production network. Since then, hundreds of associates have started working at other technologies or other facilities. By the end of this year, four-cylinder engine production will have relocated to Hams Hall, UK, and Steyr, Austria. The relocation of engine production as a whole from Munich will reach completion by 2024 at the latest.

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Uniquely flexible and highly efficient, the BMW Group production network is able to respond quickly to changing markets and regional sales fluctuations. Expertise in manufacturing is a key contributor to the BMW Group's profitability.

The BMW Group production network uses a range of innovative digital and Industry 4.0 (IoT) technologies, including virtual reality, artificial intelligence and 3D printing applications. Standardised processes and structures across the production system ensure consistent premium quality and allow a high degree of customisation.

**The BMW Group**

With its four brands BMW, MINI, Rolls-Royce and BMW Motorrad, the BMW Group is the world's leading premium manufacturer of automobiles and motorcycles and also provides premium financial and mobility services. The BMW Group production network comprises 31 production and assembly facilities in 15 countries; the company has a global sales network in more than 140 countries.



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In 2020, the BMW Group sold over 2.3 million passenger vehicles and more than 169,000 motorcycles worldwide. The profit before tax in the financial year 2020 was € 5.222 billion on revenues amounting to € 98.990 billion. As of 31 December 2020, the BMW Group had a workforce of 120,726 employees.

The success of the BMW Group has always been based on long-term thinking and responsible action. The company set the course for the future at an early stage and consistently makes sustainability and efficient resource management central to its strategic direction, from the supply chain through production to the end of the use phase of all products.

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