

Media Information
1 July 2026

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First glimpse into production: BMW Group Plant Woodruff assembles high-voltage batteries for the new BMW iX5

+++ Series production starts in December +++ Efficient production using artificial intelligence and virtual reality +++ Highest quality standards: Zero-defect battery production +++

Woodruff, South Carolina, USA. In December, the new BMW Group Plant Woodruff will begin series production of high-voltage batteries for the new fully-electric BMW iX5. As part of the vehicle's world premiere, the company offered a first glimpse of its state-of-the-art manufacturing facilities. With AI-supported production processes, digital twins and virtual reality applications, the new plant is setting industry standards for the assembly of high-voltage batteries.

Site strengthens electromobility in the US and footprint in South Carolina

"Plant Woodruff plays a key role in the ramp-up of electromobility in the US," said Raymond Wittman, member of the Board of Management of BMW AG responsible for Production. "With our Gen6 high-voltage battery, we're not only taking a major technological leap – we are also setting new standards in production. In Woodruff, we are combining cutting-edge processes, artificial intelligence and the expertise of our employees to create a production facility designed for the highest quality."

"With Plant Woodruff, we are further expanding our footprint in South Carolina and strengthening the close integration of battery and vehicle production," said Robert Engelhorn, President and CEO of BMW Manufacturing Co., LLC. "This creates the ideal foundation for the next generation of fully electric BMW X models assembled at Plant Spartanburg."

Intelligent production for maximum quality

The BMW Group has established state-of-the-art, intelligent and efficient production processes for its in-house developed sixth-generation (Gen6) high-

voltage battery. The new cylindrical round cells are integrated directly into the high-voltage battery, based on the "cell-to-pack" principle. All production steps are continuously monitored inline and comprehensively documented in real time. In-house developed AI assistants and agents analyse this data and, together with more than 300 employees and 250 robots at Plant Woodruff, ensure the zero-defect battery production. At the same time, the extensive use of artificial intelligence enhances Overall Equipment Effectiveness (OEE) in production. Well before commissioning, digital twins of production and virtual reality applications support planning and employee training.

Training in a virtual factory

All production staff at Plant Woodruff complete a VR training program developed on site. Within a virtual factory, they can practice real manufacturing operations under realistic conditions. This virtual environment replicates the plant's production lines in meticulous detail, requiring only a set of VR goggles and a PC. The training helps employees develop an understanding of relevant processes and builds confidence in operating the equipment before using the actual manufacturing systems for the first time.

Just three years from start of construction to series production

Following the official groundbreaking in June 2023, construction of the new plant began in September 2023. In September 2024, while construction was still under way, installation of the manufacturing equipment commenced. Preparations for production started in summer 2025, and the first test and pre-series batteries have been rolling off the assembly line since then. The series launch is scheduled for December 2026. "Plant Woodruff demonstrates how quickly we can scale a new battery concept to industrial production," said Rich Everly, Vice President of Production at BMW Group Plant Woodruff. "The key factor is the synergy between a skilled and dedicated team and the continuous exchange of experience within the production network."

Gen6 battery cells with reduced carbon footprint

The Gen6 battery cells used in the BMW iX5's high-voltage battery include a high proportion of secondary materials in the cobalt, lithium and nickel content.

Renewable energy is also used in the production of anode and cathode materials, as well as in cell manufacturing. Compared with the Gen5 cell used in the BMW iX, CO₂e emissions have been reduced by around 28 percent per watt-hour. Plant Woodruff does not use any fossil fuels during normal operations, while the site's industrial trucks are powered by hydrogen.

Global production strategy: local for local

Installation of the Gen6 high-voltage batteries takes place at five new production facilities, which the BMW Group is building close to its vehicle plants, in line with its "local for local" principle. In addition to Woodruff, state-of-the-art high-voltage battery assembly plants are also being built in Irlbach-Straßkirchen (Lower Bavaria), Shenyang (China) and San Luis Potosí (Mexico). The latest generation of high-voltage batteries has been in series production in Debrecen, Hungary, since October 2025. This "local for local" approach strengthens regional infrastructure and existing facilities and helps secure jobs. The global production network for high-voltage batteries benefits from close collaboration between the German pilot plants and series production facilities worldwide.

How the BMW Group assembles its Gen6 high-voltage batteries

The BMW Group sources battery cells for its high-voltage batteries from leading cell manufacturers. The highest technical standards apply. Upon receipt of goods, additional measurements – such as voltage checks – are carried out. Next comes so-called cell clustering, where the battery cells are connected to coolers. This step ensures optimal insulation and cooling of the cells. The cell clusters and cell contact system are then laser-cleaned and welded with pinpoint precision. The inline inspection continuously monitors each weld seam in real time. An innovative foaming process follows, ensuring that all elements are protected as a mechanical unit. The hardened foam guarantees the safety, stability and durability of the high-

voltage battery. The housing is then closed, sealed and riveted. In the final assembly step, the Energy Master – the central control unit – is installed onto the high-voltage battery. A permanently elastic sealing adhesive is applied to ensure a reliable seal. Finally, each high-voltage battery undergoes a 100% end-of-line inspection. From Woodruff, the high-voltage batteries are transported to Plant Spartanburg, located just 15 miles away.

The BMW iX5's high-voltage battery: 800-volt, with high energy content

The first battery-electric BMW iX5 is based on sixth-generation BMW eDrive technology, featuring round cells and 800-volt technology. With an available energy content of 144 kWh in the US and 141 kWh in the EU (net), the BMW iX5 60 xDrive boasts the largest high-voltage battery of any fully-electric BMW model to date. Propulsion is provided by e-drives on both the front and rear axles, and by the electric BMW xDrive all-wheel drive.

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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 services. The BMW Group production network comprises over 30 production sites worldwide; the company has a global sales network in more than 140 countries.

In 2025, the BMW Group sold 2.46 million passenger vehicles and more than 202,500 motorcycles worldwide. The profit before tax in the financial year 2025 was € 10.2 billion on revenues amounting to € 133.5 billion. As of 31 December 2025, the BMW Group had a workforce of 154,540 employees.

The economic success of the BMW Group has always been based on long-term thinking and responsible action. Sustainability is a key element of the BMW Group's corporate strategy and covers all products – from the supply chain through production to the end of their useful life.

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