

Media Information
24 November 2017

BMW Group invests 200 million euros in Battery Cell Competence Centre

- Focus on technological expertise in battery-cell development and production
- Fifth-generation electric drivetrain integrates electric motor, transmission and power electronics in a single component
- Rare-earth-free electric motor ensures resource independence

Munich. The BMW Group continues to focus on the implementation of its electro-mobility strategy, with the company concentrating all its technological expertise relating to battery cells at a new competence centre. Klaus Fröhlich, member of the BMW AG Board of Management, responsible for Research and Development, and Oliver Zipse, member of the BMW AG Board of Management, responsible for Production, were joined by Bavarian Minister of Economic Affairs Ilse Aigner for the symbolic ground-breaking of the BMW Group Battery Cell Competence Centre in Munich today. This interdisciplinary competence centre aims to advance battery cell technology and introduce it into production processes. The company will invest a total of 200 million euros in the location over the next four years, creating 200 jobs. The centre will open in early 2019.

Speaking at the ground-breaking ceremony, Klaus Fröhlich said: “We will be concentrating all our in-house expertise along the battery-cell value chain at our new high-tech competence centre. International experts working in the new development labs and facilities will conduct important research to refine cell chemistry and cell design. We will focus on further improvements in battery performance, lifespan, safety, charging and also costs. We will set the benchmark for the industry.”

Oliver Zipse added: “By producing battery-cell prototypes, we can analyse and fully understand the cell’s value-creation processes. With this build-to-print expertise, we can enable potential suppliers to produce cells to our specifications. The knowledge we gain is very important to us, regardless of whether we produce the battery cells ourselves, or not.”

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Ilse Aigner said: “With its competence centre for battery cell technology, BMW is making another major investment in Bavaria. This shows a clear commitment to our state as an industrial, high-tech manufacturing location. Battery cells are a key technology on the road to emission-free mobility. Bavaria is at the forefront of electromobility – a position we will continue to expand to secure long-term growth, prosperity and jobs.”

The BMW Group’s **Strategy NUMBER ONE > NEXT** makes electromobility, digitalisation and autonomous driving clear technological focus points, strengthening Germany’s position as an innovation driver for mobility and the future technologies. As the leading supplier of premium mobility, the BMW Group concentrates on customer needs and wishes, playing a decisive role in advancing the ACES topics (Autonomous, Connected, Electrified and Services).

Competence Centre for Battery Cells provides important competitive edge

The battery cell is the heart of the battery. It determines performance, energy content, charging capabilities and lifespan, thereby making a significant contribution to the performance of an electrified vehicle.

In the labs, research and prototyping facilities, which will make up the battery cell competence centre, specialist departments will analyse cell design and cell technology. They will also create prototypes of future battery cells, focusing on the chemical composition of the cells, use of different materials, how the cell behaves in critical or extremely cold conditions, charging and rapid-charging behaviour and evaluating cell sizes and forms. This in-house technological expertise is key to enhancing the battery, thereby enabling higher performance capabilities.

The BMW Group will also gain build-to-print expertise and can then contract out production of battery cells produced to its exact product requirements and specifications. This core competence – which covers the entire value chain from selection of materials, cell design, integration into battery systems, manufacturability and production technologies – gives the

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company a definite competitive edge, while leveraging cost benefits and economies of scale.

The BMW Group has already completed years of research into battery cells and acquired a high level of evaluation competence, especially through the development of the BMW i models. The company will concentrate know-how from various specialist departments and locations at the new Battery Cell Competence Centre and step up its efforts in this area to achieve faster impact. Research findings will be incorporated directly into the latest battery generation.

**Fifth generation of BMW Group electric drivetrains from 2021:
electric motor, transmission and power electronics form new component**

The BMW Group is already developing the fifth generation of its electric drivetrain, for release in 2021, in which interaction between the electric motor, transmission, power electronics and battery have been further optimised.

A decisive advantage of this future electric drive is that the electric motor, transmission and power electronics are combined in a new and separate electric-drive component. With its compact design, this highly integrated new component takes up significantly less space than the three separate components used in previous generations. Its modular concept means that it is also scalable and can be modified for a wide range of different packages and performance levels, increasing flexibility and making it easier to install the new electric drivetrain component in different vehicle derivatives. Integrating the electric motor, transmission and power electronics into a single component uses fewer parts and therefore saves costs.

A further highlight is that the new electric motor does not require the use of rare earths, making the BMW Group no longer dependent on their availability.

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The fifth-generation electric drivetrain also uses new, more powerful batteries. Their scalable, modular design means they can be used flexibly in the respective vehicle architecture at different production sites.

Thanks to further development of the battery in particular, the new electric drivetrain extends the range of pure battery-electric vehicles to up to 700 km. In plug-in hybrid models, distances up to 100 kilometres are possible. In this way, the BMW Group continues to expand its innovation leadership in this field.

With the electric motor and battery developed and produced in-house, the BMW Group already possesses a high level of core competence and value creation for electric drivetrains. In-house production gives the BMW Group a decisive competitive advantage, by securing know-how in new technologies, gaining important systems expertise and leveraging cost benefits.

The flexibility of the new electric drivetrain component and upgraded modular battery will continue to ensure the BMW Group's freedom of action in the future. Thanks to the scalable electric modular systems, from 2020 it will be possible to fit all model series with any drivetrain, according to demand. The fifth-generation electric drivetrain achieves high levels of driving performance and good range with much less weight. It will be integrated into both front- and rear-wheel drive flexible enhanced vehicle architectures, which will also be suitable for all drive forms. This flexibility means the company will be able to meet the predicted demand for several hundred thousand electrified vehicles in 2025.

International production network

The BMW Group benefits from a highly flexible production network that can respond quickly to demand for electrified models. All electrified vehicles are integrated into the existing production system.

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The company already produces electrified vehicles at ten locations worldwide. The batteries needed for these models come from the three battery factories in Dingolfing, Germany, Spartanburg in the USA and Shenyang, China. The BMW Group plant in Dingolfing plays a leading role within the network as the centre of competence for electric drive systems.

BMW Group leading manufacturer of electrified vehicles worldwide

Between January and the end of October, the BMW Group delivered a total of 78,096 BMW i, BMW iPerformance and electrified MINI vehicles to customers worldwide – an increase of 63.7% on the previous year. With nine electrified cars currently available, the BMW Group is one of the leading manufacturers worldwide. The company is well on track to sell 100,000 electrified vehicles worldwide by the end of the year.

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The BMW Group production network

Strong customer demand and the launch of new models resulted in very high capacity utilisation for the BMW Group's production network in 2016. With 2,359,756 vehicles produced for the BMW, MINI and Rolls-Royce brands, production volumes reached a new all-time high. This figure included 2,002,997 BMW, 352,580 MINI and 4,179 Rolls-Royce units. The company's German plants, which produced more than one million vehicles, are responsible for roughly half of production volumes.

With its unparalleled flexibility, the leading-edge production system is in excellent shape for the future. Based on Strategy NUMBER ONE > NEXT, it is characterised by a high level of efficiency and robust processes. The BMW Group's production expertise represents a decisive competitive advantage and contributes to the profitability of the company and its sustainable success.

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Quality and speed of reaction are key factors in the BMW production system, as well as flexibility. Digitalisation, standardised modular concepts and intelligent composite construction testify to the high level of expertise within the production network. At the same time, the production system offers a very high level of customisation and allows customer specifications to be modified up until six days before delivery.

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. As a global company, the BMW Group operates 31 production and assembly facilities in 14 countries and has a global sales network in more than 140 countries.

In 2016, the BMW Group sold approximately 2.367 million cars and 145,000 motorcycles worldwide. The profit before tax was approximately € 9.67 billion on revenues amounting to € 94.16 billion. As of 31 December 2016, the BMW Group had a workforce of 124,729 employees.

The success of the BMW Group has always been based on long-term thinking and responsible action. The company has therefore established ecological and social sustainability throughout the value chain, comprehensive product responsibility and a clear commitment to conserving resources as an integral part of its strategy.

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