

BMW unveils sixth-generation eDrive technology for future EVs

24-Feb-2025 14:47 GMT

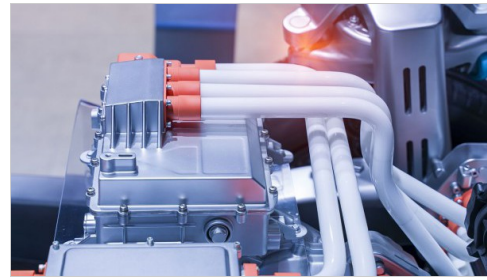
IHS Markit

S&P Global

Supply Chain and Technology, Automotive

The new BMW eDrive system enhances EV performance with faster charging, a longer range and innovative production techniques, starting in Hungary

German luxury-auto maker BMW Group has unveiled significant advancements in electric-drive technology with the introduction of the sixth generation of the BMW eDrive technology, pivotal for fully electric Neue Klasse vehicles. The new developments include an in-house developed and produced intelligent central control unit named the Energy Master, a high-voltage battery concept promising enhanced energy density, faster charging and longer range, along with a flexible approach to electric-motor production utilizing different motor types, ensuring flexibility and technology-openness.



Source: Getty Images/kynny

The BMW Group emphasized its commitment to electric mobility and a technology-open approach to cater to diverse mobility needs worldwide. The Neue Klasse model, benefiting from the Gen6 eDrive technology, will debut in series production later this 2025 in Hungary.

This technology introduces an 800V high-voltage battery concept, resulting in a 30% faster charging speed and 30% increase in range for certain models. The design allows for integration into various models, making the battery a structural component of the vehicle and introducing bidirectional charging as a standard feature. These advancements are supported by the development and production expertise concentrated in Bavaria and Austria, covering the entire electric-mobility value chain.

Further insights detail the "local for local" approach for high-voltage battery assembly and the establishment of five new production facilities near BMW vehicle plants, enhancing production security and job creation. This principle extends to the supplier network for battery cells, with contracts for five battery cell factories across Europe, mainland China and the US. Innovations in battery production follow the "cell-to-pack" and "pack-to-open-body" principles, with numerous patented innovations by the BMW Group.

Recycling processes for high-voltage batteries at the end of their life cycle are being developed in partnership with SK Tes and other partnerships in the US, Mexico and Canada, focusing on a closed-loop approach for the sustainable integration of recovered materials into new battery production. Additionally, the BMW Group is pioneering direct recycling methods for residual materials from battery cell production.

The new Gen6 eDrive system maintains the principle of an electrically excited synchronous motor (EESM), with improvements in efficiency, power output and a major upgrade for compatibility with the new 800-V architecture. The inclusion of asynchronous motor (ASM) technology alongside EESM technology illustrates the BMW Group's technology-open approach, allowing for a wide range of electric-motor configurations to suit customer preferences.

Finally, the production of Gen6 electric drive systems is set to begin at BMW Group Plant Steyr in summer 2025, leveraging the plant's longstanding expertise in drive systems. This move is expected to safeguard jobs and expand the plant's role in electric mobility. Thermal management developments at Steyr are crucial for optimizing performance parameters such as range and charging time. Plant Landshut has emerged as a major component provider, innovating in manufacturing processes and technologies, including a €200 million investment in the light metal

foundry to support the Neue Klasse project.

This content may be AI-assisted and is composed, reviewed, edited and approved by S&P Global.

CONTACTS

The Americas

+1 877 863 1306

Europe, Middle East & Africa

+44 20 7176 1234

Asia-Pacific

+852 2533 3565

www.spglobal.com/mobility

Copyright © 2025 S&P Global Inc. All rights reserved.

These materials, including any software, data, processing technology, index data, ratings, credit-related analysis, research, model, software or other application or output described herein, or any part thereof (collectively the “Property”) constitute the proprietary and confidential information of S&P Global Inc its affiliates (each and together “S&P Global”) and/or its third party provider licensors. S&P Global on behalf of itself and its third-party licensors reserves all rights in and to the Property. These materials have been prepared solely for information purposes based upon information generally available to the public and from sources believed to be reliable.

Any copying, reproduction, reverse-engineering, modification, distribution, transmission or disclosure of the Property, in any form or by any means, is strictly prohibited without the prior written consent of S&P Global. The Property shall not be used for any unauthorized or unlawful purposes. S&P Global’s opinions, statements, estimates, projections, quotes and credit-related and other analyses are statements of opinion as of the date they are expressed and not statements of fact or recommendations to purchase, hold, or sell any securities or to make any investment decisions, and do not address the suitability of any security, and there is no obligation on S&P Global to update the foregoing or any other element of the Property. S&P Global may provide index data. Direct investment in an index is not possible. Exposure to an asset class represented by an index is available through investable instruments based on that index. The Property and its composition and content are subject to change without notice.

THE PROPERTY IS PROVIDED ON AN “AS IS” BASIS. NEITHER S&P GLOBAL NOR ANY THIRD PARTY PROVIDERS (TOGETHER, “S&P GLOBAL PARTIES”) MAKE ANY WARRANTY, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, FREEDOM FROM BUGS, SOFTWARE ERRORS OR DEFECTS, THAT THE PROPERTY’S FUNCTIONING WILL BE UNINTERRUPTED OR THAT THE PROPERTY WILL OPERATE IN ANY SOFTWARE OR HARDWARE CONFIGURATION, NOR ANY WARRANTIES, EXPRESS OR IMPLIED, AS TO ITS ACCURACY, AVAILABILITY, COMPLETENESS OR TIMELINESS, OR TO THE RESULTS TO BE OBTAINED FROM THE USE OF THE PROPERTY. S&P GLOBAL PARTIES SHALL NOT IN ANY WAY BE LIABLE TO ANY RECIPIENT FOR ANY INACCURACIES, ERRORS OR OMISSIONS REGARDLESS OF THE CAUSE. Without limiting the foregoing, S&P Global Parties shall have no liability whatsoever to any recipient, whether in contract, in tort (including negligence), under warranty, under statute or otherwise, in respect of any loss or damage suffered by any recipient as a result of or in connection with the Property, or any course of action determined, by it or any third party, whether or not based on or relating to the Property. In no event shall S&P Global be liable to any party for any direct, indirect, incidental, exemplary, compensatory, punitive, special or consequential damages, costs, expenses, legal fees or losses (including without limitation lost income or lost profits and opportunity costs or losses caused by negligence) in connection with any use of the Property even if advised of the possibility of such damages. The Property should not be relied on and is not a substitute for the skill, judgment and experience of the user, its management, employees, advisors and/or clients when making investment and other business decisions.

The S&P Global logo is a registered trademark of S&P Global, and the trademarks of S&P Global used within this document or materials are protected by international laws. Any other names may be trademarks of their respective owners.

The inclusion of a link to an external website by S&P Global should not be understood to be an endorsement of that website or the website’s owners (or their products/services). S&P Global is not responsible for either the content or output of external websites. S&P Global keeps certain activities of its divisions separate from each other in order to preserve the independence and objectivity of their respective activities. As a result, certain divisions of S&P Global may have information that is not available to other S&P Global divisions. S&P Global has established policies and procedures to maintain the confidentiality of certain nonpublic information received in connection with each analytical process. S&P Global may receive compensation for its ratings and certain analyses, normally from issuers or underwriters of securities or from obligors. S&P Global reserves the right to disseminate its opinions and analyses. S&P Global Ratings’ public ratings and analyses are made available on its sites, www.spglobal.com/ratings (free of charge) and www.capitaliq.com (subscription), and may be distributed through other means, including via S&P Global publications and third party redistributors.