

# Castrol and Lion Smart collaborate to enhance EV battery thermal management

10-Nov-2025 12:23 GMT

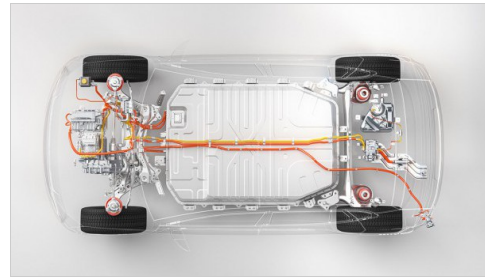
IHS Markit

**S&P Global**

Supply Chain and Technology, Automotive

## The partnership aims to improve battery cooling for EVs using Castrol's thermal fluids and Lion Smart's battery-colling technology

Castrol has partnered with Lion Smart to develop an advanced battery module for high-performance electric vehicle applications. The collaboration combines Lion Smart's direct battery-cooling technology with Castrol's expertise in thermal fluids and battery thermal management.



Source: Getty Images/Sven Loeffler

This partnership aims to enhance battery thermal management for passenger cars, trucks and battery energy storage systems (BESS) globally by employing direct battery cooling. This approach involves the use of Castrol ON EV Thermal Fluids to enable superior heat dissipation, increased power density, and improved battery lifespan and safety.

The newly engineered battery module features a modular design that ensures uniform temperature distribution and minimizes temperature gradients within the cell. It maximizes the actively cooled contact surface and incorporates a single-cell fuse to mitigate the potential propagation from internal short circuits. These innovations contribute to significant advancements in battery temperature management, improving the efficiency of plug-in hybrid vehicles by enhancing energy recuperation, power output and operational safety, and reducing system costs.

The partnership is part of Castrol's strategic focus on developing direct battery cooling technologies and battery fluid innovations. This collaboration was showcased at the Battery Show Europe, where experts from both companies demonstrated its potential to significantly boost PHEV performance through better cooling and thermal balance.

According to Matthias Donner, vice president of Advanced Mobility and Industrial products at Castrol, this partnership with Lion Smart represents a pivotal step toward deploying direct battery cooling technology in real-world scenarios, enhancing EV performance and safety. Michael Geppert, head of Engineering at Lion Smart, emphasized that the collaboration aligns with its commitment to advancing electrical performance in high-power applications and meeting the evolving demands of the electric mobility sector.

***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](http://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](http://www.spglobal.com/ratings) (free of charge) and [www.capitaliq.com](http://www.capitaliq.com) (subscription), and may be distributed through other means, including via S&P Global publications and third party redistributors.