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## Making progress with electricity

Storage technology is a decisive factor for the future of electromobility

In the car industry, combustion engines are no longer the yardstick against which all values are measured. Electric drives have begun to become established on the market. The new BINE-Themeninfo brochure, “Electromobility” (1/2017) presents current research results on technology and economic efficiency. Here, the focus is on battery and fuel cell technology, the materials used and the impact of increasing electromobility on the power grid.

The technology of electric motors has already been developed to maturity. It has a high degree of effectiveness and is robust and low-maintenance. However, efficient electrochemical storage systems and a comprehensive infrastructure are still needed if electromobility is to become more widespread. Battery experts agree that further energy density increases are possible with Li-ions in particular, even doubling the current levels. The new BINE-Themeninfo brochure “Electromobility” explains the strengths and weaknesses of battery, fuel cell and hybrid drives. Specialists assume that in the medium term, the different systems will coexist on the market.

When electric cars are connected to the power grid, they can be combined to form virtual storage power plants. These take in excess energy and feed it back into the grid when necessary. The BINE publication explains the vehicle-to-grid concept and presents a number of different research projects related to this topic funded by the German Federal Ministry for Economic Affairs and Energy. Here, the key issue is what the overall effect of electromobility on the energy system and on the potential for preventing CO<sub>2</sub> will be.

This BINE-Themeninfo brochure has been written by authors working with Professor Dr. Martin Winter from the MEET Battery Research Center of Westfälische Wilhelms-Universität Münster and Dr. Wedigo von Wedel from NEXT ENERGY – EWE-Forschungszentrum für Energietechnologien.

The BINE-Themeninfo brochure, which can be obtained free of charge from the BINE Information Service at FIZ Karlsruhe, is available online at [www.bine.info](http://www.bine.info) or by calling +49 (0)228 92379-0. The brochure cover and an additional image can also be downloaded from the press section in this web portal.

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