



# Test Phase Started: Charging Structures In Comparison

The Amperix energy management system from the "Green by IT" group of the „High Performance Computing“ division enables the efficient use of battery storage systems, heat pumps and charging stations for e-vehicles and optimizes their control. The in-house solution is also in use in the Fraunhofer ITWM building. Currently, the team is testing eight different charging devices for electric cars.



When is the optimal time to charge the e-car? From the driver's point of view, the charging process should be as incidental as possible, during an appointment, working hours, shopping or parked at home. Those who operate a charging station are driven by the question of when the electricity stored in the vehicles is particularly cheap and when it is better not to use too much electricity. The Amperix energy management system, which is suitable for private households as well as for both private households and businesses.

## Theory and Practice Combined on Site

In order to optimally further develop the system to meet the requirements of electromobility, eight different wall boxes are in use at Fraunhofer ITWM. "We test different operating and control strategies live at our institute and gain practical experience, which we then incorporate into our Amperix," describes group leader Matthias Klein-Schlöbl. "This brings us significantly further overall further, because we combine theory and practice."

## Exceeding the Load Peak Is Expensive

Special attention is paid to the topic of "peak load shaving". Load peaks occur in many companies that have significantly higher electricity consumption at certain times. This aspect is very important for businesses, because it can quickly become expensive: Anyone who exceeds their load peak once a year for a quarter of an hour can be charged additional grid usage fees in the five-digit range," explains Klein-Schlöbl.

This means that if electric cars are also charged during a peak period of electricity consumption, for example at lunchtime when a company's cafeteria is in full operation, this can quickly and unnoticeably drive up costs. But not if a reliable energy and load management system like Amperix is in place. Grid-serving measures such as avoiding load peaks and keeping consumption as constant and predictable as possible also help to keep the power grid stable and trouble-free.

*Fill it up, please! The Fraunhofer ITWM tests charging on-site charging systems.*

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