RESEARCH PROJECT – BIDIRECTIONAL CHARGING

Increasing network stability, lowering electricity costs, and contributing to climate protection – that is the vision that Audi and the Hager Group are pursuing. The incorporation of the electric car into the domestic grid is at the core of an innovative research project on bidirectional charging. This offers major advantages in combination with a photovoltaic system in particular. Excess PV electricity can be stored temporarily and output as needed.

The electric car as a flexible energy storage unit

The idea is as simple as it is genius: The high-voltage battery of the electric car not only is charged via the wall box at home but can also supply energy back to the house as a decentralized storage medium. If the customer has a photovoltaic system, the electric car serves as a temporary storage medium for the domestically generated eco-electricity. When the sun is no longer shining, the vehicle can supply the stored electricity back to the house. Bidirectional charging at home – also known as Vehicle to Home (V2H) – has great potential to reduce the home owner's electricity costs and increase network stability. As a further expansion stage in combination with a home storage unit, it is possible to achieve near complete energy independence and increased security of supply in the event of a blackout. "Using the battery of electric vehicles to contribute to climate protection while lowering electricity costs at the same time is a vision that we have found fascinating since the very beginning. And we have found an ideal partner in Audi," explains Ulrich Reiner, project manager at Hager Group.

Near-series technology in use

What sounds simple in theory requires a high level of technical intelligence and coordinated interaction between different technical components in terms of infrastructure and in the vehicle in practice. An Audi