ChargeLounge E-charging station for IKEA customers

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hargeLounge. Credit: Fraunhofer-Gesellschaft

IKEA shoppers in Ludwigsburg can now use a special electric charging station. Werner Spec (Ludwigsburg's mayor), Prof. Wilhelm Bauer (Fraunhofer IAO director), Ulf Wenzig (IKEA Germany sustainability

manager), and Anja Heinle (IKEA Ludwigsburg manager) opened Germany's first "ChargeLounge". It features an integrated and speedy e-charging station in the parking lot of IKEA Ludwigsburg.

Developing a proper recharging infrastructure for electric vehicles is key if the social transformation toward greener mobility is to succeed in Germany. With the opening of a ChargeLounge for Ludwigsburg customers who drive electric vehicles, IKEA is embarking on this path. A modular box measuring 24 square meters, ChargeLounge offers the option of combining an electric charging station with multi-purpose room configurations. The room module in Ludwigsburg houses an exhibition about sustainable kitchen solutions, but a café or free WLAN area would also be possible. The station can recharge as many as four vehicles at a time. For a charge sufficient to allow an e-vehicle to travel 100 km, ChargeLounge needs approx. 40 minutes – typically the shortest time customers spend at IKEA. Customers can use the charging station for free during store hours.

Win-win situation for users and providers of charging stations

Fraunhofer IAO did not have only users in mind during development of the charging station: "The buffer battery integrated into the technology module contributes to sustainability in several ways," director Prof. Wilhelm Bauer explains. "It means ChargeLounge's high charging capacity does not need an expensive high-capacity grid connection, and can also offer useful ancillary services to the grid." In practice, this means that it can provide both direct current – which provides a steady, constant voltage without transmission losses – or frequency-dependent alternating current. TWhat's more, the buffer battery used is a vehicle battery in its second lifecycle – highlighting another way in which e-mobility promotes efficient utilization of resources.

Ideas and suggestions for a sustainable life

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ChargeLounge does without the high-capacity and cost-intensive power connection that quick-charging stations normally need. Moreover, the entire charging unit was consolidated in a unique technology module and delivered to Ludwigsburg completely preassembled. Thanks to this modular structure, the Lounges provide plenty of leeway for value-added services adapted to a given site's requirements.

The city of Ludwigsburg and Fraunhofer IAO enjoy a long-standing innovation partnership, including many different sustainable-mobility projects. Fraunhofer IAO developed ChargeLounge in cooperation with numerous partners – including IKEA – and presented it as a demonstrator at the Hannover Messe in 2014. Please contact the person below for more information on ChargeLounge as well as other versions with charging capacities as high as 150kW for next-generation vehicles and with buffer batteries of different sizes.

Provided by Fraunhofer-Gesellschaft