

# Charge ahead

EV charge time continues to worry consumers, but now a leading systems supplier has developed an onboard fast-charging device that can recharge an EV in only 45 minutes

▶▶ Range anxiety is a big concern for many people when it comes to driving an electric car. While statistics show that most drivers very seldomly exceed the range provided by modern electric cars, the time it takes to charge an electric car remains an issue for potential EV owners.

In the same way that the Toyota Prius started the hybrid revolution and introduced drivers to partial electric driving, range extender concepts will assist the current transition to pure electric cars. Range-extended or plug-in hybrid cars such as the Chevrolet Volt, Toyota Prius PHEV, and Volvo V60 PHEV are the first of their kind. These types of cars will help drivers to discover their true range needs, while becoming aware of the advantages of electric driving.

Even though charging times of range-extended cars are not a big issue due to the presence of IC engines and batteries that usually have small capacities, the amount of time to recharge a fully electric car remains an issue.

Swiss company Brusa Elektronik AG recently presented an all-new onboard fast charger at the eCarTec fair in Munich in October. The NLG6 22kW charger fully supports three-phase charging and will charge an electric vehicle six times faster than standard chargers with only 3.7kW. This would make it possible, for example, for a depleted battery with

Simplicity is key to the NLG6 design. For example, the device is not reliant on costly DC quick charging stations, instead it allows for rapid charging through existing infrastructure



16kWh to be charged to 80% in less than 45 minutes.

The beauty of this concept lies in the fact that it does not require bulky and costly DC quick charging stations, but instead allows rapid charging through existing infrastructure. For example, high-power AC supplies are readily available all over the world, and can be used without expensive initial investments.

The NLG6 is the high-power sibling of the sixth generation of Brusa's flexible and powerful onboard chargers. It converts alternating current from single, two or three-phase outlets to DC for

charging the battery, thereby precisely controlling voltage and current flow. The charger is compatible with worldwide standards (such as SAE-J1772) on the mains side and therefore adapts to the given infrastructure.

The unit is controlled by CAN messages from a control unit, and sends live data, such as battery voltage or current levels, back to the control unit. Built-in protective features prevent damage to the charger or battery, while galvanic isolation between the mains and battery ensures personal safety.

A liquid cooling system and proprietary SoftSwing technology

mean the charger is contained within a compact housing. With lightweight construction, robust design and high IP protection, as well as high conversion efficiency, low EMI, and CAN features, the NLG6 meets all the important requirements of the industry.

Brusa's win of the eCarTec award for the charger led to the announcement of the start of series production and introduction to market by the end of next year. Following one of the largest orders in the company's history, recently placed by a European OEM, cars equipped with the NLG6 will be available by the end of 2012. ©



Brusa Elektronik unveiled its new onboard fast-charger at the eCarTec fair, which took place in October

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