

Sono Motors and pepper Trial Solar Retrofit Solution for E-Buses

Denkendorf, 11.17.2022 - pepper motion GmbH and Sono Motors, the Munich-based solar mobility OEM, are cooperating on a joint project to integrate a solar retrofit solution for commercial vehicles. As part of this cooperation, a Mercedes-Benz Citaro C1 electrified with pepper technology will be equipped with a customized version of the Sono Motors solar solution - the Solar Bus Kit. The pepper vehicle is therefore the first electric bus to use Sono Motors' solar technology. Over a period of two years, real data regarding the PV (photovoltaic) system's energy yields and the consumption data of the assemblies connected to the 24 V battery will be collected and evaluated. The bus will enter the test phase on public roads with pepper customers as early as December 2022.

The PV technology to retrofit commercial vehicles from Sono Motors is now going to be tested under regular driving and operating conditions. After installation on the E-bus provided by pepper, the charging current obtained from the solar system is fed into the low-voltage on-board network (24 V). This means that solar energy is not used directly for propulsion, but by powering the air conditioning system and other auxiliaries, the load on the high-voltage battery and DC/DC converter is reduced, which could result in longer operating times, fewer charging cycles, and lower total cost of ownership. Initial findings from field testing and data analysis are not expected until Q1 2023 at the earliest.

Even More Sustainable: Energy Generation from Integrated Solar Systems

The PV modules installed on the pepper vehicle by technology leader Sono Motors also meet the highest standards in terms of design. They are specially designed for vehicle use, semi-flexible, and highly efficient. The total power of the 14 PV modules installed on the vehicle amounts to about 1.3 kWp (kilowatt peak).

The electrical integration of the photovoltaic modules is handled by Sono Motors' own MCU (maximum power point tracking central unit), developed for the special requirements of vehicle use. The multi-channel solar charge controller has an intelligent algorithm that optimizes the energy yields of the PV modules. This results in high tracking and conversion efficiency under rapidly changing sunlight conditions. The reliable transmission of solar data from the MCU to the server is ensured via pepper's highly efficient telematics unit.



“We believe in a future in which every vehicle is a solar electric vehicle. That's why we're convinced that our first e-bus with solar technology is a great achievement for the future of public transport. Sono Motors and pepper aim to accelerate the transition towards zero-emission vehicles already today,” explains Laurin Hahn, CEO and co-founder of Sono Motors.

“We are very excited about the cooperation with Sono Motors and are looking forward to the data we will gain from this project. The idea of additionally installing PV systems directly on an e-vehicle supports our corporate philosophy of providing drive systems with maximum energy efficiency for an even more sustainable commercial vehicle sector,” says Andreas Hager, CEO of pepper.



About pepper motion GmbH

As the first digital OEM worldwide (without its own warehousing and manufacturing), pepper offers innovative solutions for the electrification (repowering) of used and new commercial vehicles. With its holistic approach to telematics, charging infrastructure, and fleet management, the company designs quickly implementable and cost-efficient solution packages for a sustainable mobility transformation.

By repowering existing commercial vehicles with certifiedetrofit kits for buses and trucks, vehicles are given an environmentally friendly "second life" and therefore enable the most sustainable form of mobility, both ecologically and economically, making an active contribution to reducing emissions in transport and implementing the Clean Vehicles Directive.

pepper is ISO 9001 certified and as such is the only supplier of conversion solutions to ensure operational safety according to international automotive industry standards such as ISO 26262 for functional safety. A network of international partners guarantees service and availability across Europe.

pepper motion GmbH with headquarters in Denkendorf and offices in Garching near Munich and Paderborn employs more than 100 people. The subsidiary pepper motion Austria GmbH, based in Vienna, is the pepper Group's software development center. pepper is represented with further sales partners in Italy, France, and Poland.

www.peppermotion.com

About Sono Motors

Sono Motors (NASDAQ: SEV) is on a pioneering mission to accelerate the revolution of mobility by making every vehicle solar. Sono Motors' disruptive solar technology has been engineered to be seamlessly integrated into a variety of vehicle architectures - including buses, trucks, trailers, and more - to extend range and reduce fuel costs as well as the impact of CO2 emissions, paving the way for climate-friendly mobility.

The Company's trailblazing vehicle, the Sion, has the potential to become the world's first affordable solar electric vehicle (SEV) for the masses. Empowered by a strong global community, Sono Motors has over 20,000 reservations with advance down-payments for the Sion as of 1 September 2022.

www.sonomotors.com

Press contact:

360°communications GmbH

Email: peppermotion@360communications.de

Phone: +49 89 5436994 00