Stadtreinigung Dresden

Fraunhofer IVI

Press release

Dresden, May 22, 2025

Charging at the push of a button: Stadtreinigung Dresden tests automatic charging system for electric trucks

Fraunhofer IVI and Stadtreinigung Dresden GmbH (SRD), the leading waste management company in the greater Dresden area, are launching a practical test of an automated charging system that improves the efficiency and safety of charging electric vehicles in urban logistics operations. This new technology makes charging electric trucks easier, as the entire process can be started and stopped without cables and at the push of a button. This marks a significant step forward in developing practical, space-saving charging solutions to meet the challenges of electric mobility.

MEGA-LADEN contact system in use
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What does an automated charging system for electric vehicles have to do with the city's leading waste management company? The answer lies in the cooperation between applied industrial research and practical operation: An innovative charging solution from Dresden is being tested by a committed local partner.

Fraunhofer IVI developed and patented an automated charging system as part of the MEGA-LADEN research project, which was funded by the then German Federal Ministry for Economic Affairs and Climate Action (BMWK) from 2020 to 2024. This technology was successfully integrated into a 15-ton test truck – a vehicle that is now available to SRD for testing. This collaboration offers the opportunity to gain valuable experience in dealing with electric mobility and to further increase the efficiency of their operations.

E-truck on the Fraunhofer IVI test track
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The underbody charging system is based on an automated contact system that creates a safe and space-saving connection between the vehicle and the charging infrastructure. The system is not based on inductive charging technology, but on a conductive system allowing for the high levels of charging power required for the economical operation of heavy commercial vehicles in the logistics sector. An electromagnet ensures reliable contacting and the system meets all necessary safety standards.

As the charging process is initiated without the need for a cable and at the touch of a button, the necessary effort for drivers is significantly reduced and safety during the charging process is significantly increased. In addition, the implementation of this technology will make the city cleaning service cleaner and may enable it to identify a practical and space-saving charging solution for its future vehicle fleet. Currently, SRD is already testing a fully electric waste collection vehicle, which further supports the intent to create sustainable and environmentally friendly mobility.

A visionary feature of this technology is its focus on autonomous driving. In a future where vehicles operate autonomously, it will be crucial that charging processes can take place without human intervention. The system developed potentially enables vehicles to initiate and carry out the charging process independently. This concept is also conceivable for automated depots in which vehicles dock at charging stations independently and execute the charging process. This would not only reduce the required staff numbers but also increase safety.

The data collected during the test will both contribute to the optimization of the charging system and provide valuable insights into the user-friendliness and availability of the technology. The findings from practical application will help to improve the charging system and tailor it to the specific requirements of urban logistics operations.

All these activities will benefit the residents of Dresden, as electric mobility goes hand in hand with cleaner air and significantly lower noise emissions. The cooperation with Dresden's municipal cleaning service will also promote the acceptance and integration of this technology in real-world applications.

It is the two partners' wish to collaborate with a vehicle manufacturer to build a small series of vehicles in order to electrify the fleet in a sustainable manner and further expand the advantages of electric mobility in Dresden.

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Contact

Fraunhofer Institute for Transportation and Infrastructure Systems IVI

Matthias Breitkopf
Project Manager
Department Vehicle Systems
Vehicle Engineering
Phone +49 (0)351/ 46 40-642
matthias.breitkopf@ivi.fraunhofer.de

Elke Sähn
Group Manager
Science Communication and Design

Phone +49 (0)351/ 46 40-612
elke.saehn@ivi.fraunhofer.de

www.ivi.fraunhofer.de/en.html

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