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Vehicles powered by electricity from braking buses

As from today, electric vehicles in Arnhem can be powered by electricity obtained from braking buses. Jan Jacob van Dijk, a member of the Gelderland Provincial Executive, and Geert Ritsema, a councillor in Arnhem, are opening a special charging station for electric vehicles at the city's Schuytgraaf shopping centre. This charging station has been integrated into a mast that forms part of the overhead wire infrastructure for the trolleybus network – a first in Europe. Some of the electricity supplied here is obtained from braking trolleybuses that feed energy back into the grid. The plan is to install more of these charging stations over the next few years.

Four thousand masts
Integrating a charging station into a mast used for trolleybus overhead wires sounds simple enough. After all, the mast is already in place and is already connected to the power grid. Arnhem's trolleybus network comprises around four thousand of these masts, which are often located close to parking spaces, and there are 40 trolleybuses operating on the network. This plan therefore has huge potential. Arnhem's local authority welcomes initiatives that allow the trolleybus infrastructure to be used for a wide range of purposes. The masts are already being used for signposting and streetlighting, for example.

Cleanest form of public transport
"The cleanest form of energy is the energy you save", explains Geert Ritsema. "By using the energy obtained from braking, we are saving energy. The Arnhem-Nijmegen region already has the cleanest public transport network in the Netherlands. With this unique charging station we are making it even cleaner." Jan Jacob van Dijk: "It is also an innovative charging station that uses recycled batteries as part of an existing, finely meshed network – an excellent example of smart sustainability that contributes to energy-neutral mobility."

Initially, the charging station will be used by the taxis operated by Breng Flex. This is a reservation-based transport service that transports passengers from one bus stop to another throughout the Arnhem-Nijmegen region. Some of its taxis are fully electric vehicles and will be able to 'top up' at this charging station between journeys.

Braking energy stored in recycled batteries
The E-bus 2020 - Smart Trolley Grid project is investigating how existing trolleybus overhead wires could be used to charge electric vehicles. In this way the local authority hopes to encourage the use of emission-free electric vehicles. Braking buses return energy to the overhead wires, which is stored in (recycled) batteries in public spaces. These batteries can be used to supply green electrical energy for electric vehicles, public lighting and other applications.

International interest
Other cities that manage overhead wire networks for trolleybuses or trams, both in the Netherlands and abroad, are keeping a close eye on the trial. There are more than 300 cities with such a network in Europe alone. A number of cities in the German state of North Rhine-Westphalia and the Swiss cities of Lucerne and Zurich have expressed concrete interest in feeding back energy obtained from braking buses and trams into the grid.

Note for editors, not for publication: If you have any questions about this press release, please contact Carlo van der Borgt, spokesperson for the Municipality of Arnhem, by calling +31 (0)26 377 23 04 or sending an e-mail to carlo.van.der.borgt@arnhem.nl.

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