



ZF Electrifies Buses in London and the U.S., Enabling Zero-Emission City Driving

- **ZF's electric drive axle for London's ultra-low emission zone (ULEZ)**
- **31 locally emission-free double-decker buses will be equipped with electric portal axles from ZF**
- **Additional orders for several U.S. cities**

Hanover/Friedrichshafen. ZF is highlighting two market successes for its tried-and-tested AxTrax AVE electric portal axle. Firstly, 31 of the famous red London double-decker buses will be equipped with this technology and glide through the city powered solely by electricity. The electric buses will be built by British manufacturer Optare and comply with one of the strictest emissions regulations worldwide. This shows how ZF is supporting zero local emissions with attractive, inner-city mobility solutions. The second success is marked by a new chapter in the partnership between ZF and New Flyer of America, Inc., the leading North American city bus manufacturer. The transport associations of several major U.S. cities have ordered 100 buses from the Xcelsior CHARGE™ model series equipped with ZF's AxTrax AVE electric portal axle.

"ZF supplies purely electric drive systems especially which meet the strictest emissions regulations for urban metropolises", said Fredrik Staedtler, head of the Commercial Vehicle Technology Division at ZF. "The AxTrax AVE drive axle is an ideal solution for manufacturers and municipalities to shape their local inner-city traffic with zero emissions, while at the same time providing an attractive mobility offer. I am delighted that London and other metropolises in the U.S. have now also chosen to work with ZF as a partner."

Public transport will be a hundred times cleaner

Like most major cities, Great Britain's capital, London, suffers from poor air quality. Public transport systems can play a key role in fighting air



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pollution, which is why Transport for London (TfL), London's public transport authority, is fully focused on e-mobility. The Metrodecker EV, flagship of Optare's bus portfolio, highlights this focus. Thirty-one new model buses will be equipped with the AxTrax AVE – ZF's powerful and quiet drive with zero local emissions. The potential remains huge as London plans all buses in the city center to be electrically powered by 2037.

ZF and the vehicle manufacturer New Flyer of America, Inc. have cooperated for over 20 years to build powerful and efficient buses. A new order in the U.S. demonstrates just how much both companies have benefited from this collaboration in the age of electro-mobility. A total of 100 buses from the Xcelsior CHARGE™ model series will be delivered to public transport companies in several U.S. cities by 2020. These include the Los Angeles County Metropolitan Transportation Authority, King County Metro Transit in Seattle, Massachusetts Bay Transportation Authority in Boston and Metro Transit in Minneapolis.

Efficient and proven

The AxTrax AVE was introduced for the first time in 2012 and has been successfully deployed around the world ever since. The electric drive axle can be combined with hybrid as well as fuel cell configurations or be powered by a battery. Due to the flat design, manufacturers have a great deal of freedom when it comes to designing the interior. As a system supplier, ZF can also deliver the appropriate hardware and software to optimally align performance, efficiency and service life of the drive.

Captions:

- 1) Zero-emissions on the Thames: Starting in summer 2019, the AxTrax AVE electric drive axle from ZF will support all-electric driving on 31 double-decker buses in London.
- 2) Powerful and environmentally friendly, the AxTrax AVE electric drive axle from ZF drives low-floor buses up to a maximum axle



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load of 13,000 kilograms. The electric motors integrated into the wheel heads have a total output of 250 kilowatts.

- 3) Will soon drive with AxTrax AVE as a zero-emission vehicle through multiple U.S. cities: The NewFlyer Xcelsior CHARGE™

Photos: Optare, Thomas Drake (1), ZF (2), NewFlyer (3)

Press contacts:

Frank Discher, Technology and Product Communications

Phone: +49 7541 77-960770, e-mail: frank.discher@zf.com

Robert Buchmeier, head of Technology and

Product Communications, Heritage Communications,

Phone: +49 7541 77-2488, e-mail: robert.buchmeier@zf.com

ZF Friedrichshafen AG

ZF is a global leader in driveline and chassis technology as well as active and passive safety technology. The company has a global workforce of 146,000 with approximately 230 locations in some 40 countries. In 2017, ZF achieved sales of €36.4 billion. ZF is one of the largest automotive suppliers worldwide.

ZF allows vehicles to see, think and act. The company invests more than six percent of its sales in research and development annually – in particular for the development of efficient and electric drivelines and also in striving for a world without accidents. With its broad portfolio, ZF is advancing mobility and services in the automobile, truck and industrial technology sectors.

For further press information and photos please visit: www.zf.com