

## Leipzig Transport Authority GmbH – On its way to electric city buses

The city of Leipzig is a fair city with a long tradition. It is the most populous city in Saxony with around 500,000 inhabitants.

On behalf of city of Leipzig, Leipzig Transport Authority GmbH (LVB) is responsible for the long term with the provision of regular services in public transport until at least 2028. Currently it operates 14 tram lines. In addition, 60 bus routes in the city and in the region are operated by the LVB GmbH. In 2009, a total of 126.5 million passengers were transported.

### *Trolleybuses in Leipzig?*

The LVB is faced with the decision for procurement of 50 articulated buses for the services in the years 2010 to 2014. With these new acquisitions, the basic principles of propulsion technology for the coming years are being manifested. To reduce the envi-

ronmental impact through lower emissions in the fleet, electrical power is a conceivable answer within the general trend towards electromobility.

The LVB has around 320 km of railway overhead power supply system for the tram with cables and rectifier substations (GUW). Since different city bus routes are crossing the network, a link to a network of electric city buses is conceivable and possible. Investments in infrastructure can be minimized in this way. Recovery effects can mutually be used in a more effective way. For the servicing, maintenance and operation of infrastructure, no new capacity needs to be created, as this is already available in sufficient technical qualifications within LVB. Years ago, Leipzig was already a trolleybus city and through the Trolley project it is again on the way to become a city using electric city buses soon again.





## Main activities in Trolley

### Optimising Energy Use

The reintroduction of electric city buses in Leipzig is the central subject of the LVB within the trolley project. Against this background, the possibilities of energy supply for the electric operation of electric buses from an external network are being examined.

Here, in particular, the above-mentioned tram grid network plays a prominent role. The improvement of automatic contact devices between grid and vehicle and the variant comparison of different post-supply options should be investigated.

### Increasing Efficiency

Locally, the electric bus is completely free of emissions. It emits no particulate matters, has a much lower noise level and is

at a standstill, for example at the bus stop, almost silently. A trolleybus represents an immediately available, mature technology using control technology of modern trams. With its combination of electric supply system and energy storage, the benefits of a grid-bound system, where no additional energy conversion is needed, can be linked with the benefits of a free-space system, with its flexibility limited to the operating range. Which existing bus routes are suitable for use with electric buses, as well as the efficiency of electric city buses and the costs of its introduction should be examined within Trolley and prepared for other interested take-up cities.

In this way, Leipzig will become the European model city for the (re)introduction of electric city buses. Other cities in Central Europe, anticipating the introduction of the trolleybus, will benefit from the results of the LVB.



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