OBJECTIVES

- Providing cost-efficient bus charging by integration in existing municipal infrastructure
- Supporting public transport electrification (buses) by second use of batteries
- Securing sustainability and transferability of the overall concept for other cities

CHARGING CONCEPTS FOR ELECTRIC CITY BUSES

Depot charging

- Suitable for small fleets
- Considerable strain on grid, large vehicle batteries
- Interim solution

Opportunity charging

- Total costs are lower for large fleets
- Power supply similar to trams
- Solution for the future, in particular with GUW+
- Lighter construction of buses

CONTACT

If you would like to learn more about the project, please send your requests to: **info@guwplus.de**

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GUW+

SUBSTATION CONCEPT
for the Public Transport of the Future

GUW+ ENERGY SUPPLY CONCEPT

The GUW+ project consortium is developing a concept for the **shared energy supply of electric buses and light rails** that enables the **integration of energy storage units to offer grid stability services** in DC substations with bidirectional power supply. The energy supply of charging stations for electric buses will be **electrically isolated from the rail's energy supply**. Existing legal conditions are thereby taken into consideration and possible needs for adaptation in this context will be identified.

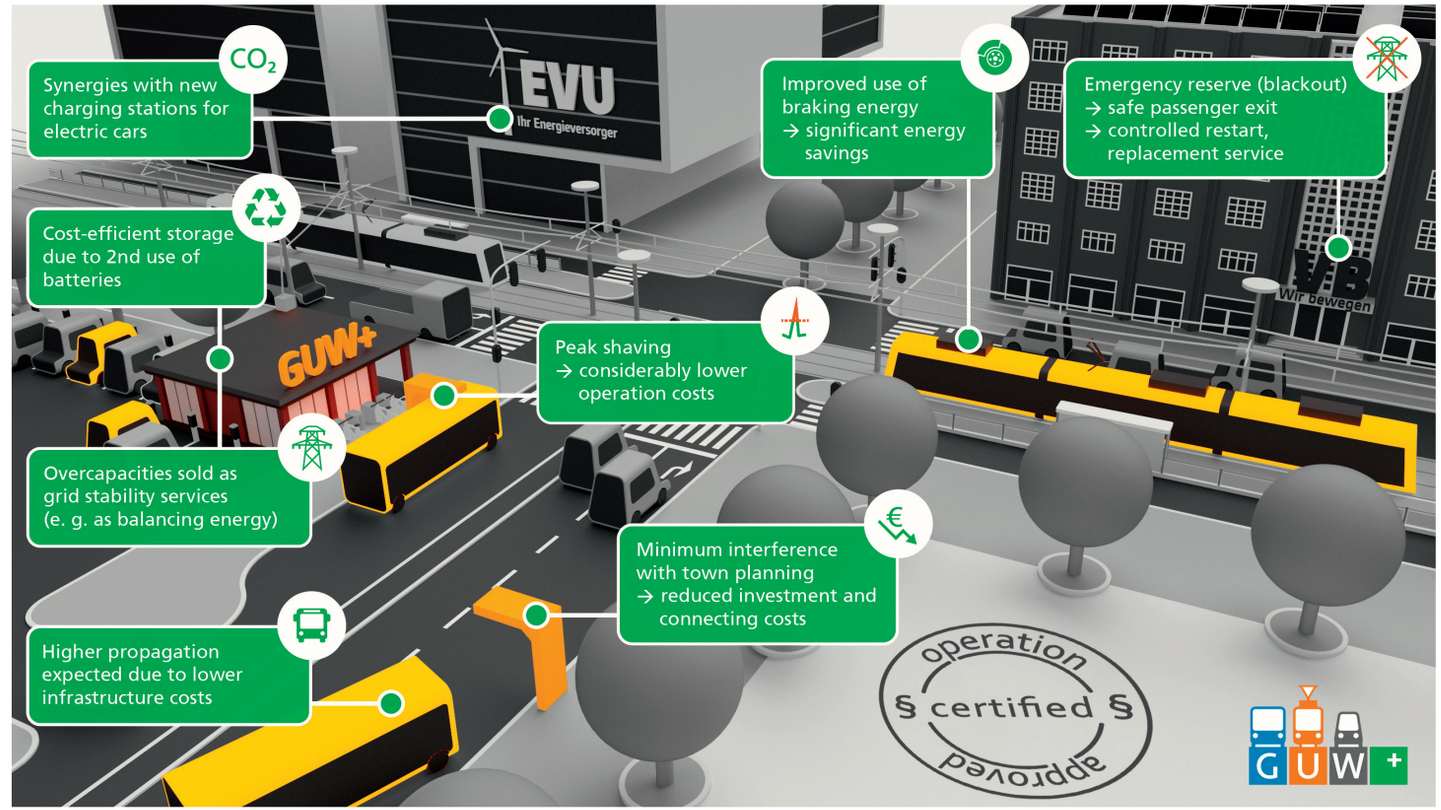
The **controlable reversible DC substation GUW+** connects the **existing infrastructure** for the energy supply of light rails and trams with **charging stations for electric buses**.

In addition, a **battery storage unit** is installed in GUW+. This storage is used to avoid peak loads, temporarily store excess braking energy from trams or light rails and provide energy on demand.

With GUW+'s system configuration, **grid stability services** can be offered and **blackout scenarios** of the energy supply can be handled.

GUW+'s overall objective is to actively support the **market launch of electromobility** in the field of **road-bound public transport**.

BENEFITS OF COMBINING SUBSTATIONS WITH ELECTRIC CHARGING STATIONS AND BATTERY STORAGES



ADDITIONAL BENEFITS

- Installation of high-performance opportunity charging stations across the city transport infrastructure
- Reducing energy costs for electric buses by approx. 15% by means of consolidation
- Increasing the use of braking energy to a utilization factor of > 95%

PARTNERS

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- M&P Motion Control & Power Electronics GmbH
- Technische Universität Dresden