



Pillar C - Multi-purpose Use of electric public transport infrastructure

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Pillar C Actions

Business Cases and Development Schemes



- **Very individual approaches in this Pillar**
 - Legal barriers are a big issue → Leipzig feasibility study?
 - Technical issues too → Oberhausen demo (metering etc.)
 - Demand estimation/political work → Barcelona

General Pillar C Business Case



- **1) Needs assessment**

- Find suitable locations, cooperation with car park operators/political authorities → Bremen, Barcelona

- **2) Technical Issues**

- Available capacity, grid connection, grid feedback, voltage stability, available charging stations, metering system (standardized meters)

→ Oberhausen, Szeged, London

- **3) Regulatory/Tax Issues, Accounting**

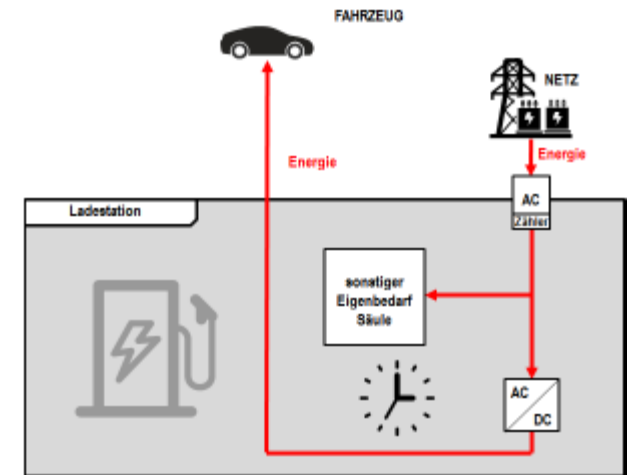
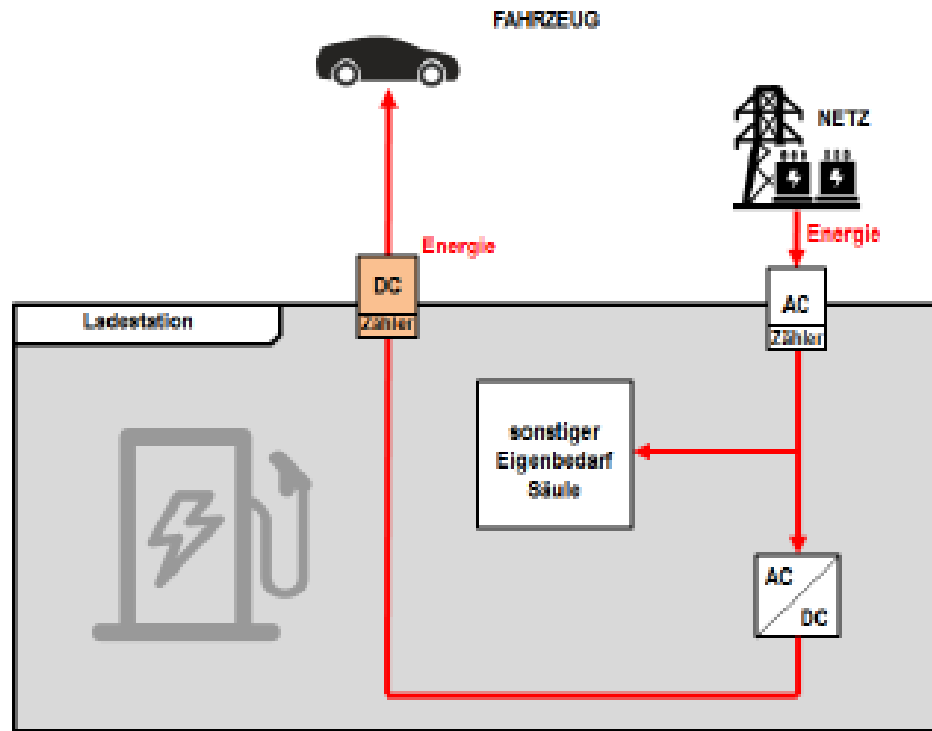
- Accounting system → Oberhausen, Szeged
- Regulatory clarification → Leipzig

Experiences from STOAG



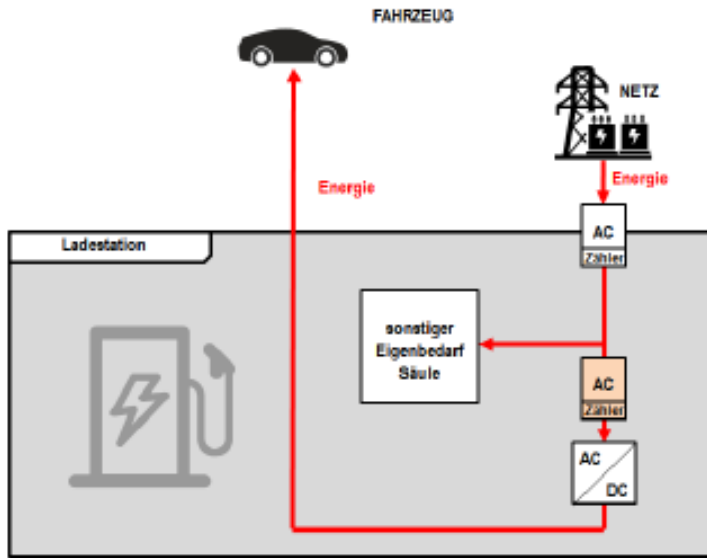
- **A Calibrated/Standardized Metering System for DC measurement** is required
 - not available at the moment
 - Exceptional permit: Sell energy by coupon (Full charge for x €)
 - Investments have to be done by charging infrastructure manufacturers
- **Standardized Data accounting**
 - Regulations given by PTB since March 2017 in Germany
 - OCCP protocol used in Europe, providing signed values

DC-Charging fed from AC-grid



- Energy metering has to be performed with a gauged DC meter
- Time has to be metered with a gauged clock (1 % error of measured timeframe)

AC-metering of DC-charging station



Use of a gauged AC-meters to measure the charged energy
Allowed for DC charging stations installed until End of 2017, with a maximum power of 50 kW

- Conditions:
 - 1. measuring takes place directly before the rectification
 - 2. the rectification can be clearly allocated to one charging process
- The affected consumer has to be informed, that the energy losses caused by rectification are part of the given measurement value

Accounting /Tax



- Clear accounting between PT operator <-> Energy provider
 - Count energy going in all in substations and Charging stations (over certain timeframe)
 - PT operator brings energy provided to Energy provider (charging station operator) into account
 - With gauged metering system, energy used for charging can be clearly declared -> taxable afterwards
- These processes have to be depicted/designed within the accounting of the involved companies

Energy law (Germany)



- **The Charging Station operator is from a energy-economic law point of view the ultimate consumer**
- Charging Station operator must not be a energy supplier, so it doesn't underlie the energy regulations
- Can choose electricity provider freely
- No influence of the energy law on the relation to the car owner, who is treated like a „guest“