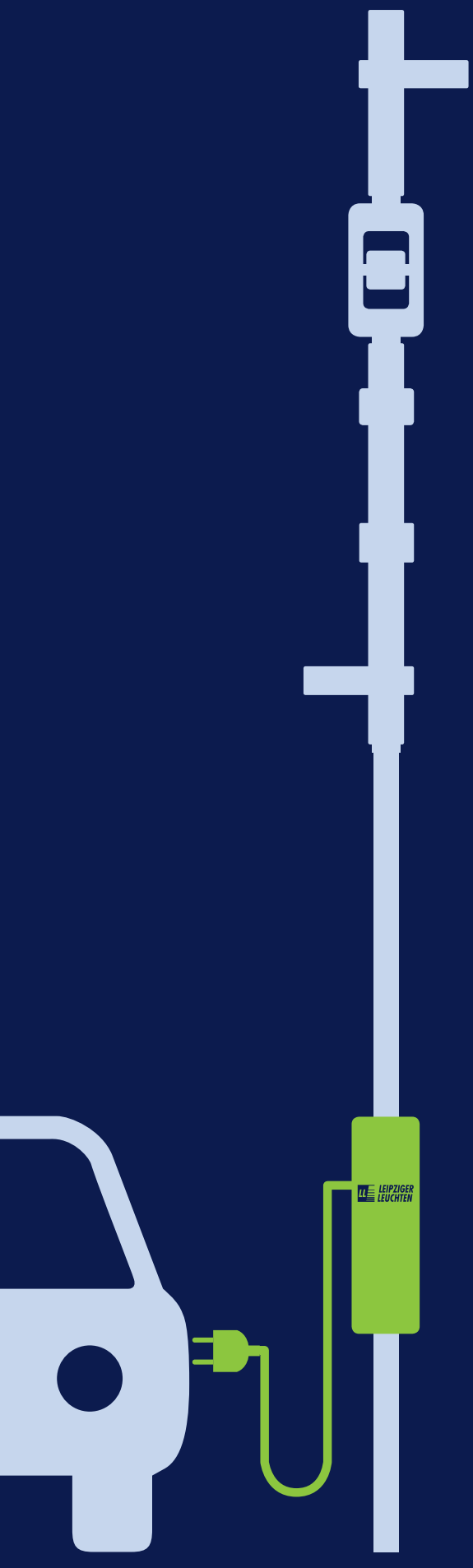
LEIPZIGER LEUCHTEN
ELECTROMOBILITY



SMART CITY | E-MOBILITY

E-MOBILITY

Why and how to install charging stations?

- state subsidies
- employees with e-cars
- customers with e-cars (service)
- to earn money
- ecological and innovative image

When creating charging points, the client needs to focus the following aspects:

- **WHERE** to install the charging stations
- **HOW** is it possible to install the cable until the charging station

With its **LANTERN PARKING SYSTEM**, **LEIPZIGER LEUCHTEN** offers a simple solution for both questions

LANTERN PARKING

Lantern Parking is the intelligent extension of the charging infrastructure by implementing or extending the charging station into or to the street lighting pole.

ADVANTAGES
- use of the existing infrastructure, thus low(er) conversion costs
- perfect adaption of the charging station to the cityscape
- sustainability due to modularity
- modifications of the charging station in line with the customer's wish
- 3 different packages of the charging station

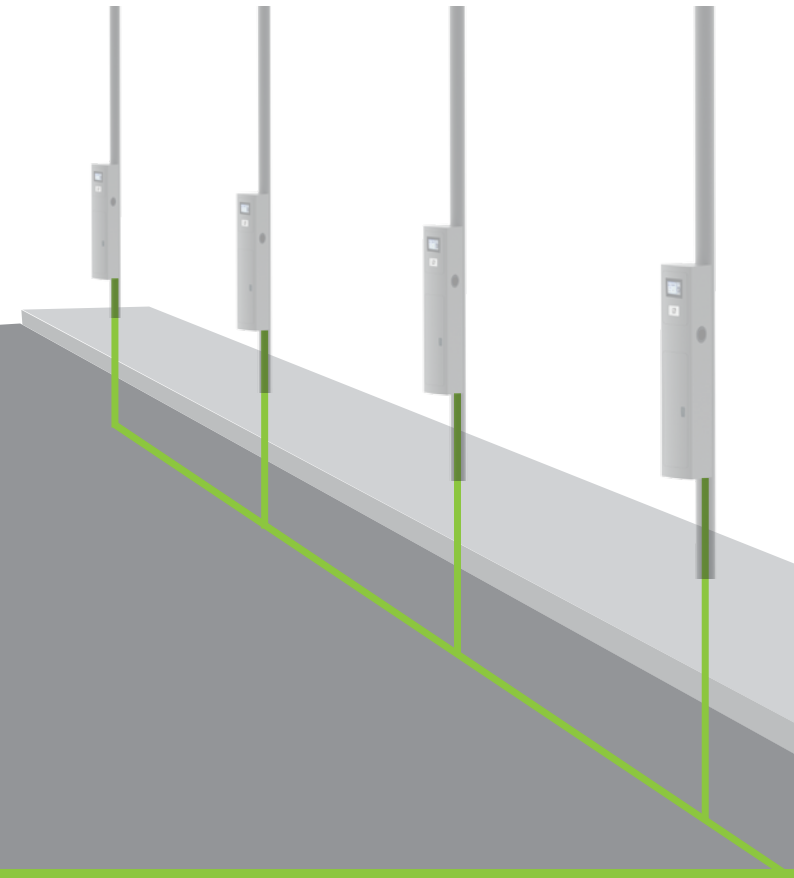
Is it possible to use the existing infrastructure?
This depends on:

only one phase saves money:
1x16A = 3.7 kW
(e.g. Ampera or Smart)

1x32A = 7.4W
(E.g. BMW 13)

three phases are more expensive:
3x16A = 11.1 kW
3x32A = 22 kW
(E.g. Tesla)

REQUIREMENTS
- continuous current for the charging station
- depending on the stock: use of the existing cable or new cable (depends on condition on site; recommendation: YY-J 5 x 25mm² for 16A; NYY-J 5 x 50mm² for 32A)
- separate switching on and off of the street lighting
- it is possible to use one phase, if the control of the luminaires is done separately
- use of all phases when having a separate cable for street lighting and continuous current for charging stations



OUR PACKAGES

Package „START“
closed and private areas

equipment:
- 1 or 2 charging sockets type 2 up to 22 kW
- use without authentication, no billing system
- no remote control or access for simple maintenance

→ plug & charge

Package „CLASSIC“
authorised group of users

equipment:
- 1 or 2 charging sockets type 2 up to 22 kW
- controller for secure loading
- smart charging – load management
- authentication via RFID card
- incl. 5 cards
- internal billing system and energy registration
- identification and treatment of power failures
- monitoring via web platform

Package „PROFESSIONAL“
public areas

equipment:
- 1 or 2 charging sockets type 2 up to 22 kW
- controller for secure loading
- smart charging – load management
- embedded computer with individual load management (only KARSTEN)
- 5 touch panel (only KARSTEN)
- authentication via RFID card, Hubject or Intercharge
- back office with billing system and energy registration
- identification and treatment of power failures via remote control (24/7)
- internal system communication (OCCP)
- customer service and technical support

OUR SOLUTIONS

TESKA MLS – charging station to the pole

dimensions:	height: 0.80m; width: 0.26m
housing:	rounded housing made of hot-dip galvanised steel, powder coated; access door to be opened with 2 torx screws
colour:	any RAL or DB colour
connection:	cable entry from below, optional from behind through the pole. Cable clamp for max. 5x25mm²
installation:	2 holes for installation to the pole (adaption to a round or square pole possible)
equipment:	Package "Start", "Classic" or "Professional"

Example: MLS TESKA MASTER Package "Professional"
Equipment:

- incl. 2 pcs. charging sockets type 2 each with 32A/400V/22kW (3-phase)
- incl. 2 RFID readers for the identification and authorisation of the user; with status LED
- incl. GSM card for the communication with the car and the back office system
- fuse protection of the power cable by a separate circuit, for back-up fuse 63A
- incl. control module, contactor, MCB, RCD, software for the functioning of the charging station, OCCP 1.6 JSON
- incl. Smart Charging: charging station distributes all available electricity to 2 charging points
- incl. Smart Grid Option: several charging stations are connected. The electricity is distributed over all charging points. There is a master – slave – grid, which communicates via data cable.

KARSTEN – charging station to the pole

dimensions:	height: 1.20m; width: 0.28m
housing:	v-shaped, rounded stainless steel housing with 1 door, powder coated
colour:	any RAL or DB colour
connection:	cable entry from behind via 1 cable gland M32 (Ø 18-25mm), cable clamp for max. 5x25mm²
installation:	for an installation to a special pole with Ø 114mm with two holes Ø 12mm; one additional hole for mains supply cable max. 5x25mm"
equipment:	Package "Start", "Classic" or "Professional"

Example: MLS KARSTEN MASTER package "PROFESSIONAL"
Equipment:

- incl. 1 pc. charging socket type 2 with 32A/400V/22kW (3-phase)
- 5 inch touch panel for start/stop, authentication
- incl. 1 RFID reader for the identification and authorisation of the user
- incl. GSM card for the communication with the car and the back office system
- fuse protection of the power cable by a separate circuit, for back-up fuse 63A
- incl. control module, contactor, MCB, RCD, software for the functioning of the charging station, OCCP 1.6 JSON
- incl. Smart Charging: charging station distributes all available electricity to 2 charging points
- incl. Smart Grid Option: several charging stations are connected. The electricity is distributed over all charging points. There is a master – slave – grid, which communicates via data cable

OUR SOLUTIONS

PABLO BS LS – charging station integrated in the pole

dimensons:	height: 3.00m; width: 0.28m x 0.12m
housing:	rectangular pole, with access door, powder coated
colour:	any RAL or DB colour
connection:	cable entry from below, via 1 cable gland M32 (Ø 18-25mm), cable clamp for max. 5x25mm²
installation:	pole installed on a separate bolt-on root or concrete foundation
equipment:	Package "Start", "Classic" or "Professional"

Example: PABLO BS LS MASTER Package "PROFESSIONAL"
Equipment:

- incl. 1 pc. charging socket type 2 with 32A/400V/22kW (3-phase)
- 5 inch touch panel for start/stop, authentication
- incl. 1 RFID reader for the identification and authorisation of the user
- incl. GSM card for the communication with the car and the back office system
- fuse protection of the power cable by a separate circuit, for back-up fuse 63A
- incl. control module, contactor, MCB, RCD, software for the functioning of the charging station, OCCP 1.6 JSON
- incl. Smart Charging: charging station distributes all available electricity to 2 charging points
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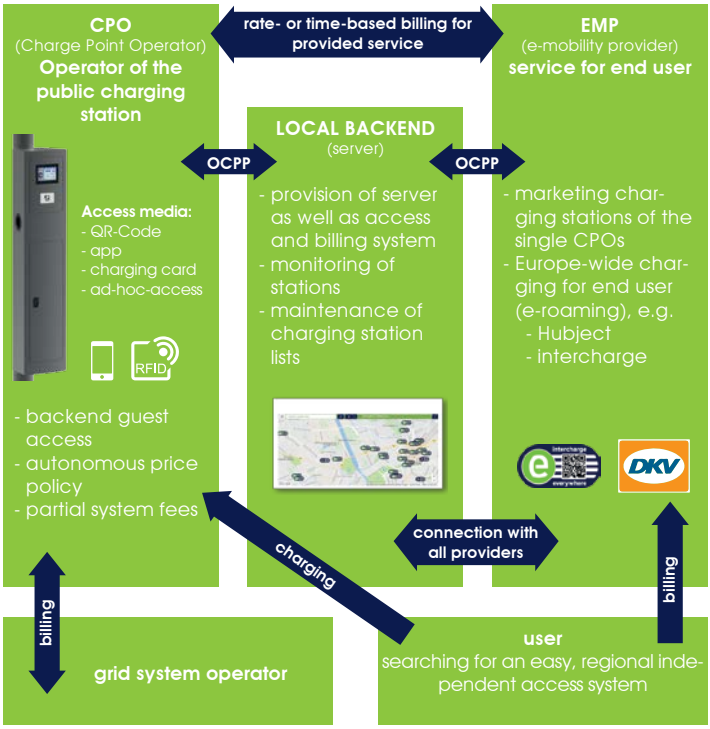


access and billing system for package 3

FUNCTIONING

SMART CHARGING

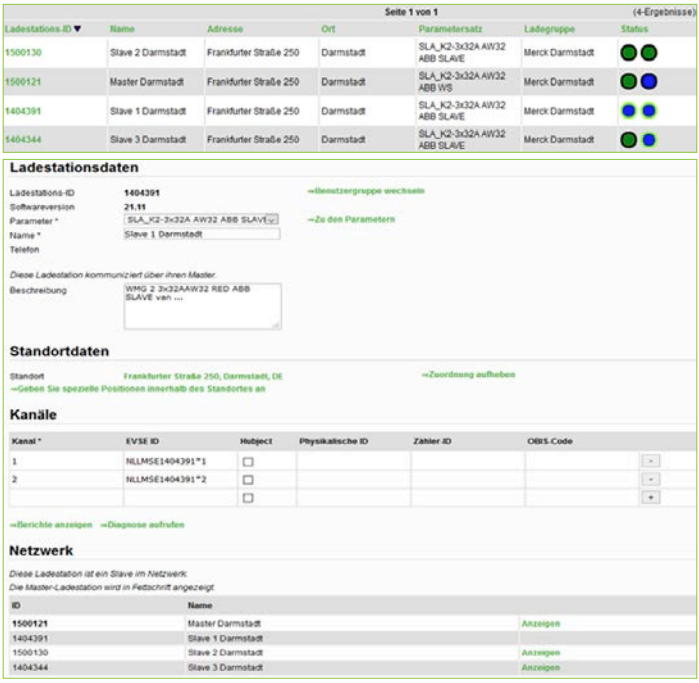
- charging station distributes all available electricity to 2 charging points
- connected load is not determined before e.g. car "Ampera" on left side, which needs 3.7kW; car "Tesla" on right side, which needs 18.3 kW. Even if "Tesla" needs more electricity than "Ampera", the full 22 kW of the charging station are shared into 11kW and 11 kW.

SMART GRID

- several charging stations are connected via 1 power supply
- the electricity is distributed among all charging points
- there is a master – slave – grid, which communicates via data cable
- the master sends all data to the back office system via SIM card
- monthly fees for the slave charging station are one-third the costs of the package "PROFESSIONAL" with master access and its billing system.

BACK OFFICE

- all charging stations are connected via OCCP 1.6 JSON
- back office according to customer's request, e.g. charging infrastructure, has-to-be,…
- Leipziger Leuchten offers a back office solution to run a cost-effective charging station
- own account enables full 24/7 access to all data. Service upon request.
- monthly invoices or credits



- back office especially developed for charging stations
- customers will receive an invoice right after the charge, so it can be used in public areas
- all accepted RFID are allowed
- customers without RFID can download an app in order to pay via PayPal
- company's profit: employees are given a RFID card, which enables to charge on company's charging stations or even on any other station. The employer bears the costs.
- the owner of the charging station receives:
  - an online portal with all current information about the charging station(s)
  - monthly invoice or credit
  - 24/7 service via helpdesk upon request
  - Free software update

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