



# Charging infrastructure for every use case

simply smart charging

chargeBIG  
—  powered by MAHLE



## smallBOX ECO & PRO

Slim in the parking lot, smart in the utility room

- ✓ Incl. load management
- ✓ Incl. sub-distribution
- ✓ Compliant with calibration law
- ✓ Flexibly expandable

**smallBOX ECO**  
up to 7,4 kW

**smallBOX PRO**  
up to 22 kW

# Scalable and centralized charging solution from a single source

With chargeBIG, you are investing in a sustainable and future-proof charging solution at your location and for your fleet. The centralized system approach offers considerable cost benefits not only for the charging hardware, but also for maintenance. Compared to conventional solutions, the sub-distribution is integrated into the chargeBIG system.

## Simple installation

Thanks to the pre-installed charging distributor, our charging infrastructure is easy to integrate into the building infrastructure.

## Attractive price

Due to its integrated sub-distribution, chargeBIG offers no hidden costs and an ideal all-in-one solution.

## Easy to maintain

Significant cost benefits for annual maintenance thanks to the centralization of the electronic components.

## Scalable

Electrification of up to 100 or more parking spaces possible without grid expansion.

## Compliant with calibration law

chargeBIG charging infrastructure is VDE certified and suitable for commercial billing processes.

## Full-service solution

A comprehensive range of services from just one provider on request from a single source.

# smallBOX System

Charging with world's smallest wallbox



## smallBOX ECO

Charging power    Single-phase up to 7.4 kW

## smallBOX PRO

Charging power    Three-phase up to 22 kW

The chargeBIG smallBOX is ideal for any application. Available as a single and double charger, the smallBOX offers a minimalist design in the parking lot.

## How the smallBOX charging system works



smallBOX

+



chargeCLUSTER  
(sub-distribution)

=

The charging  
solution for  
every use case

- Fixed charging cable with type 2 plug
- Slim design for less loss of space in the parking lot
- Various mounting options possible
- Lower costs in case of damage and vandalism thanks to centralized approach

# Mounting variants

For every use case



## Stainless steel column

Stainless steel column for up to two charging points. Ideal for installation with prefabricated foundations in outdoor areas.



## Wall mount

Robust and high-quality polypropylene / polyamide housing for one charging point. Ideally suited for underground garages thanks to simple wall mounting.



## Mounting kit

Reversible installation without interfering with the building structure, making it ideal for real estate and parking garages.

## Customized solutions



Elevated

## Cable duct

No civil engineering required. Quick and cost-effective installation and easy access to cable routing possible.



## Cable reel

Ideal for ceiling mounting and free-standing charging points without the option of wall mounting and installation with prefabricated foundations.

The smallBOX mounting variants not only offer installation options for every application, but also flexible combination variants for maximum flexibility at your location.



# chargeCLUSTER

Integrated and centralized sub-distribution



**up to 2**  
charging points

Dimensions (W x H x D)  
600 x 300 x 170 mm



**up to 6**  
charging points

Dimensions (W x H x D)  
600 x 600 x 170 mm



**up to 36**  
charging points

Dimensions (W x H x D)  
1950 x 1850 x 400 mm

## Technical data:

Charging power

Load management

Interfaces

Conformity with calibration law

Sub-distribution

Single-phase and three-phase, up to 22 kW

Dynamic load management

Modbus TCP, OCPP 1.6J

Yes

Integrated

- Configurable charging power
- Attached type 2 charging cable (5 m / 7.5 m)
- Integrated FI & DC residual current sensor
- Integration in fire alarm system
- Communication via LTE & LAN
- Integration into the building management system

With chargeBIG charging infrastructure, the chargeCLUSTER sub-distribution is already integrated as standard, ensuring smooth communication between the charging points. In the case of conventional wallbox charging solutions, the sub-distribution has to be configured separately and this is a significant cost factor.

# smallBOX PORTABLE

The special mobile solution for construction sites and events



**up to 4**  
charging points

Dimensions (W x H x D)  
715 x 1300 x 390 mm



## Technical data:

Charging power

Load management

Interfaces

Conformity with calibration law

Sub-distribution

Three-phase, up to 22 kW

Dynamic load management

Modbus TCP, OCPP 1.6J

Yes

Integrated

- Configurable charging power
- 4 x attached type 2 charging cable 5 m
- Integrated FI & DC residual current sensor
- Craneable
- Ready for immediate use
- Simple plug & play charging solution

The smallBOX PORTABLE is ideal for use on construction sites, trade fairs and events. For four charging points, it only requires a 63A supply cable, which is connected to the underside of the housing.

# Performance commitment

Charging infrastructure from a single source



- Application-specific analysis of the infrastructure on site
- Check framework conditions
- Financing and subsidy support
- Integration of existing systems

- Development of an individual charging concept
- Configuration of a cross-building loadmanagement
- Examination of possible photovoltaic & battery storage integration

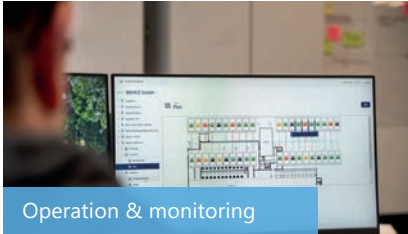


- Preparation (contracts, permits, legal aspects)
- Assembly service on site incl. construction of charging infrastructure and ground work
- Technical approval based on VDE regulations

## Advantage of a general contractor

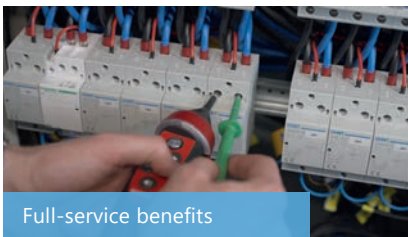
A general contractor takes care of everything, acting as a point of contact for all the customer's wishes and concerns. chargeBIG customers do not have to deal with the many issues that need to be clarified for the electrification of parking spaces individually.





- Introduction to the use of charging hardware and monitoring software
- Dashboards with charging and energy information and monthly reporting
- Utilization of the THG quota (kick-back)

- Calibration law compliant billing process towards B2B customers and B2C end customers
- Possible integration of third-party provider software
- Billing via app, credit / payment card or eRoaming



- Extensive maintenance packages
- Planning and implementation of maintenance measures according to VDE & calibration law
- Fault clearance service within 24 hours

## chargeBIG Downloads

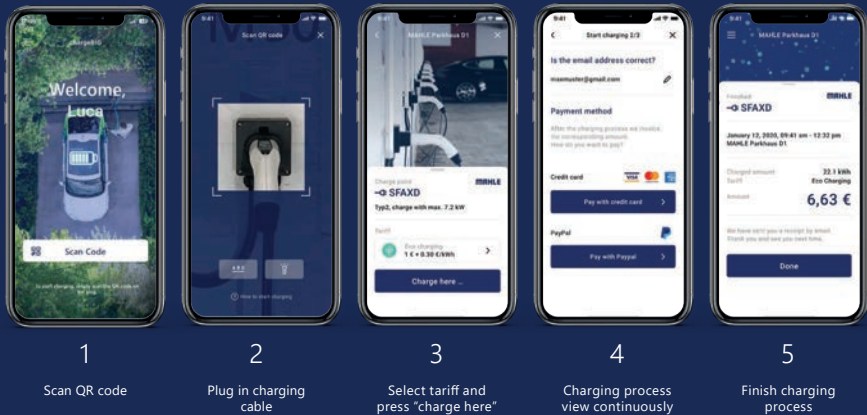
In our download area you will find further interesting content on our products, services and certifications.



# Billing options

Start the charging process with the chargeBIG app in just a few seconds

- Activation via chargeBIG app (also possible without registration)
- chargeBIG app available for private and business smartphones
- Billing to third parties in compliance with calibration law possible
- Payment of charging processes via SEPA, credit card or PayPal
- Generation of billing codes for activation and cost center allocation



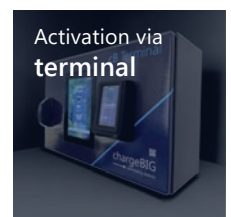
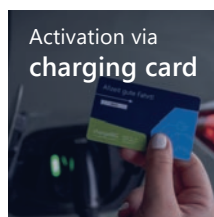
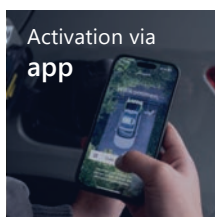
## Further billing options

### eRoaming

chargeBIG charging infrastructure is listed in common charging apps and can also be billed via these.

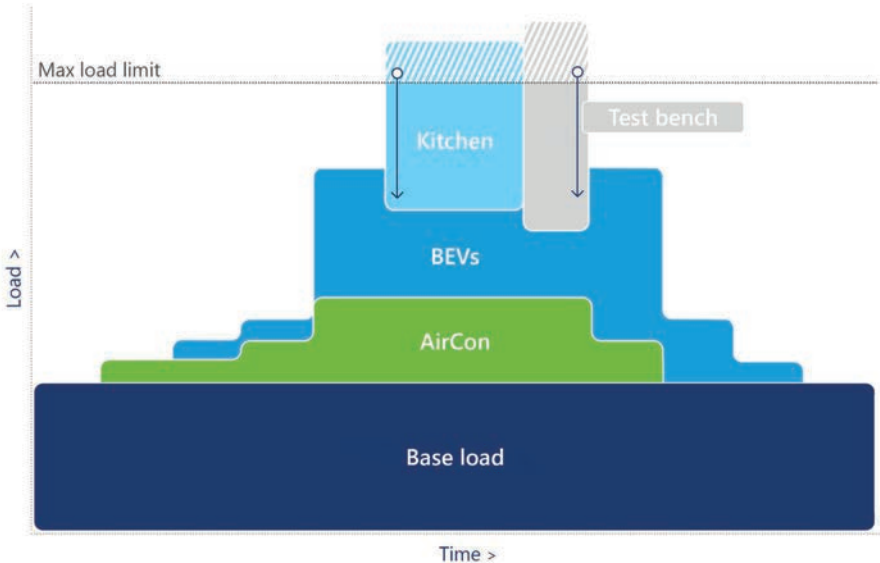
### Terminal

Charging processes can be billed at the chargeBIG payment terminal using an RFID charging card or debit and credit card.



# Dynamic load management

## Application of load management including other loads



## Security

Dynamic load management reacts to the power consumption of the canteen and the test bench (see illustration) and regulates the charging power of the electric vehicles so as not to exceed the peak load. This ensures safe use of your connection without exceeding the voltage limit and operating temperature.

- Maximum utilization of the available connected load
- Integrated unbalanced load detection and avoidance
- Control with the charging strategy: "First come, first serve"
- Integration in building management system possible
- Fast response to load specifications  
(see illustration: charging power of the electric vehicles is regulated to compensate for the energy consumption of the canteen and the test bench)

## Cost efficiency

Dynamic load management reduces the cost of expanding the grid and avoids expensive peak loads.

This avoids automatic changes to higher electricity tariffs.

# Operation and monitoring



## Conformity with calibration law

Billing in compliance with calibration law is carried out via the chargeBIG backend and the user's smartphone becomes a calibrated meter.

Information such as temperature data, values for overvoltage protection and parameters for integration into the fire alarm system are transmitted between the charging hardware and the chargeBIG backend.

The backend creates invoice receipts for the users, transmits the payment data to the payment processor, generates a report on the charging data and provides the interface to the German Federal Network Agency (BNetzA) and the S.A.F.E. e.V. transparency software.

## System integration & interfaces

The chargeBIG backend can be connected to other backends via corresponding standards such as the OICP standard (Open Intercharge Protocol). This means that chargeBIG charging points are eRoaming-capable.

The chargeBIG charging hardware can be operated via third-party backends using the OCPP 1.6J interface.

## Reports & monitoring

The chargeBIG dashboard logs the kWh charged per user, vehicle and location.

It is also possible to combine different user groups (fleet, employees, public, etc.).

In addition, users and access codes can be managed accordingly, current charging processes and potential faults at the charging points can be viewed, tariffs for the charging current can be defined, energy data can be read out and extensive reports can be downloaded.



# Maintenance and service

## Qualified service

The certified chargeBIG partner network of electrical specialists provides support, repairs and troubleshooting. Choose from different service packages for a first-class and smooth charging experience.

## Advantages of a centralized approach

Thanks to the central arrangement of the components in the chargeBIG system, you benefit from minimal maintenance costs and faster implementation. Individual components can be replaced thanks to the modular design. Any faults that occur can even be rectified remotely.

## Error prevention

Service errors are avoided in particular by the fixed charging cable. The charging point is always released by the vehicle and there is therefore no risk of interference with a locked charging cable.

## Easy maintenance

The annual maintenance includes: Visual inspection, testing in accordance with DIN VDE 0701/702, DGUV V3, DIN VDE 0105-100, functional testing, checking the backend connection, repeat testing of permanently loaded circuits and documentation of maintenance.

You can conveniently and easily arrange maintenance via the chargeBIG dashboard.



# Service packages



## Standard package

## Advanced package

Charging cabinet maintenance



Service hotline



Electrical components



Charging points



Plug



Cables



Brackets & metallic components



CPU hardware



LTE hotspot



License fees backend



Technician costs




### Maintenance costs per charging point

Monthly maintenance costs

**9 €**  
plus VAT.

**12,61 €**  
plus VAT.

 included in the price

Backend fee per charging point: 5 € per month


# Intelligent electrification

## The advantages of a modular and centralized charging infrastructure

When electrifying large parking areas, it is important to take the available grid capacity into account. Not only is dynamic load management essential, but also the right choice of charging capacity. In the following example, we show a smart electrification concept for parking spaces for companies:

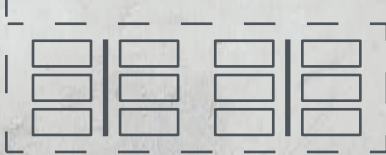
6 visitor parking spaces

smallBOX PRO + chargeCLUSTER M		Charging power	22 kW
Ø Parking duration	1 - 2 h	Ø Load quantity/vehicle	11 - 44 kWh




12 fleet parking spaces

smallBOX PRO + chargeCLUSTER M		Charging power	22 kW
Ø Parking duration	3 - 4 h	Ø Load quantity/vehicle	33 - 88 kWh



24 employee parking space

smallBOX ECO + chargeCLUSTER L		Charging power	7.4 kW
Ø Parking duration	7.5 h	Ø Load quantity/vehicle	50 kWh



The stated values are based on evaluations from over 200,000 charging processes with chargeBIG charging infrastructure.



## Companies & fleets

Centralized charging infrastructure

# What makes chargeBIG different?

## Ideal for fleet, vehicle fleet and parking garage operators

The key to the electrification of large parking areas lies in a centralized approach. All components requiring maintenance are bundled in the chargeCLUSTER sub-distribution unit, which means that little space is lost in the parking lot. In this way, chargeBIG enables scalable and intelligent charging infrastructure for professional applications.

### smallBOX - small and smart



- Fixed charging cable with type 2 plug
- Slim design for less loss of space in the parking lot
- Lower costs in case of damage and vandalism thanks to centralized approach

## Sub-distribution compliant with calibration law

- Integrated dynamic load management
- Compatible with common interfaces
- Integration into security and building management
- Easy to maintain thanks to centralized system components
- Recalibration possible without dismantling the charging infrastructure



## Activation via terminal

With the chargeBIG terminal, guests can use the chargeCARD to conveniently and easily activate charging processes and pay by credit card or use charging cards from their preferred charging provider.





## Cities & municipalities

Charging infrastructure compliant with calibration law for public billing



# Sustainable and intelligent charging solutions

## Fields of application

For municipalities and cities, the chargeBIG charging infrastructure at public locations with larger parking areas, such as Park&Ride parking lots or parking garages, is of interest.

## Public billing

chargeBIG complies with calibration law and charging current can therefore be billed to third parties for a fee.

As a billing medium, we offer the chargeBIG app developed in-house and the payment terminal including charging card, as well as ad-hoc payment via credit card and PayPal.

Via eRoaming, chargeBIG charging infrastructure is listed in the common charging apps and can also be billed via these.

## Electrification of Park&Ride parking spaces

### Municipality Lorch in Baden-Württemberg

At the municipal parking lot of the train station, 28 parking spaces were electrified with chargeBIG charging infrastructure.

The technical operation and billing of end users is handled by chargeBIG. The charging points can be activated easily and conveniently via app, eRoaming, debit or credit card and charging card.



## Utilization of GHG quotas as an advantage

GHG quota trading increases the share of renewable energies in the transport sector and describes the mandatory purchase of certified GHG quotas for distributors of fossil fuels. GHG quotas are in turn offered for sale on the market by operators of charging stations. The additional revenue from the GHG quotas and the federal funding for the installation of charging points contribute to the economic viability of municipal and urban projects.



## Housing industry

Charging infrastructure for residential complexes and underground parking garages

# Integration into the building infrastructure

## Advantages compared to conventional wallboxes

With the smallBOX charging system, it is possible to react flexibly to the demand for charging points. Thanks to load management, it is possible to charge several vehicles in parallel without any problems, even if the grid capacity of the house connection is limited.

The smallBOX charging solution can be assigned to the power lines of the individual parties. Each party can therefore use its own charging tariff. There is no administrative effort and no central billing is necessary.



## All-In-One solution

Thanks to intelligent load management, the system can prevent overloading of the house connection. In addition, the centralized structure of the system greatly reduces investment costs. Maintenance can also be carried out with less effort, as all components requiring maintenance are combined in the chargeCLUSTER systems.

## Quick and easy installation

Thanks to the centralized approach, it is possible to install and commission up to 24 smallBOX PRO charging points within a week.



## Are you interested?

Contact us for a tailor-made and personalized offer for a perfect charging experience.

We look forward to your inquiry.



[www.chargebig.com](http://www.chargebig.com)



## Workshops & car dealerships

Smart and flexible charging infrastructure

# The game changer for workshops

## Intelligent charging infrastructure for garages and car dealerships

The centralized smallBOX AC charging system is ideal for charging at the lifting platform, in the showroom or in the parking lot. Thanks to various mounting options, the smallBOX is ideally suited for every application and installation location. Thanks to its compliance with calibration law, charging processes can be billed accurately and on a customer-specific basis. This means that energy costs can be invoiced directly with workshop orders.

### Fast activation and billing



- Intelligent distribution of the available power with up to 22 kW per charging point
- Easy to use thanks to the permanently attached-type 2 charging cable and intuitive chargeBIG app
- Slim design for less loss of space in the parking lot

### Easy integration into existing systems and infrastructure

- Compatible with third-party hardware and software
- Integration into security and building management
- Easy installation and maintenance thanks to centralized system components
- Recalibration possible without dismantling the charging infrastructure



## The mobile charging park

With the smallBOX PORTABLE, you can flexibly and easily decide on the location of the charging infrastructure. All you need is a 63 A supply cable to put the four charging points into operation, so no conventional installation is necessary.







## Hotels

Suitable for any parking space size with a slim design

# The bonus for guests

## Arrive, plug in, check in.

After a long journey, not only should the stay in the hotel be comfortable and enjoyable, but also the use of the charging infrastructure on site. Here is just one small example: The guest's trunk is still full of suitcases and the charging cable in the false floor is difficult to reach - no problem with the chargeBIG smallBOX, thanks to the permanently attached charging cable with type 2 plug. This is just one of the many advantages of the smallBOX charging system.

## Elegant and slim design



- Intuitive and easy to use
- Less loss of space in the parking lot than with conventional wallbox solutions
- Lower costs in the event of damage and vandalism thanks to centralized approach

## "All-inclusive" charging infrastructure

- Integrated dynamic load management
- Compatible with common interfaces
- Integration into security and building management
- Maintenance-friendly and cost-efficient thanks to centralized system components



## Goody for guests?

With the chargeBIG terminal, guests can use the chargeCARD to conveniently and easily activate charging processes and pay by credit card or use charging cards from their preferred charging provider.





## Vision of chargeBIG

Charging infrastructure for a  
sustainable future

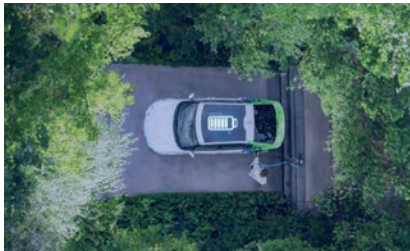
# Rethinking charging infrastructure

## The origin of chargeBIG

chargeBIG is part of the MAHLE Group and operates within the company as an independent subsidiary. MAHLE is a leading international development partner and supplier to the automotive industry as well as a pioneer and technology driver for the mobility of tomorrow. With chargeBIG, MAHLE is extending the system boundaries to infrastructure as part of its dual strategy and enabling e-mobility through the provision of scalable charging infrastructure.

## The team

A team of almost 30 people is now working on the development and commercialization of centralized charging solutions for charging electric and hybrid vehicles. In doing so, chargeBIG utilizes MAHLE's expertise and resources. Operating as an independent subsidiary within the large group and choosing the right partners enables the chargeBIG team to react flexibly to customer requests or market developments and to guarantee the highest standards of quality and functionality.



## The vision

The chargeBIG approach is to bundle the intelligent technology of the charging infrastructure centrally in a charging distributor. This creates new opportunities for scalability. More charging points can be created at one location than with conventional charging solutions.

The vision is to make e-mobility even easier. The customer wants to charge their electric car - ideally in an uncomplicated and convenient way.

## Shape the future of mobility.

Become part of chargeBIG. Benefit from fast decision-making processes, flat hierarchies and a high level of personal responsibility.

We look forward to receiving your application at: [www.jobs.mahle.com](http://www.jobs.mahle.com)

# chargeBIG ecosystem

A solution to suit every need



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