



**E DEUTZ®**

**PowerTree**

**—**

# DEUTZ PowerTree

Joint Project of Deutz and Torqeedo



High End Industry Components



The First Fast Charger for Construction Sites



Easy Installation and Commissioning



Zero Emission certified ✓



High Flexibility Through Mobile Use



100% Fast Charging without Grid Connection



Balancing of Grid Power fluctuations



# DEUTZ PowerTree

Joint Project of Deutz and Torqeedo



- Ensuring power supply for electrically driven off-road applications at the point of use
- Input supply up to 63 A @ 400 V (CEE)
- Output: fast charging up to 150 kW (also without grid connection)
- Mobile use and robustly designed in 10ft sea container, suitable for construction sites
- Buffer storage in form of E-DEUTZ batteries
- Digital services - charging management for multiple vehicles, consumption-analysis and billing
- Suitable for various applications



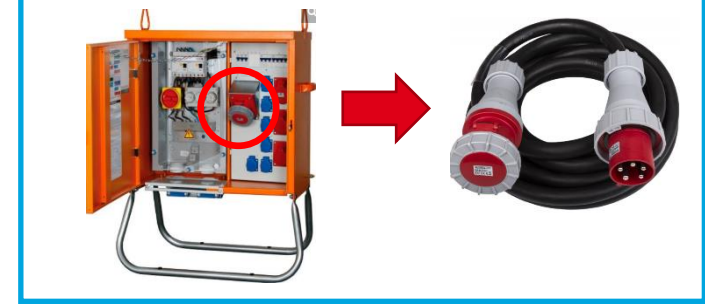
# DEUTZ PowerTree

Joint Project of Deutz and Torqeedo



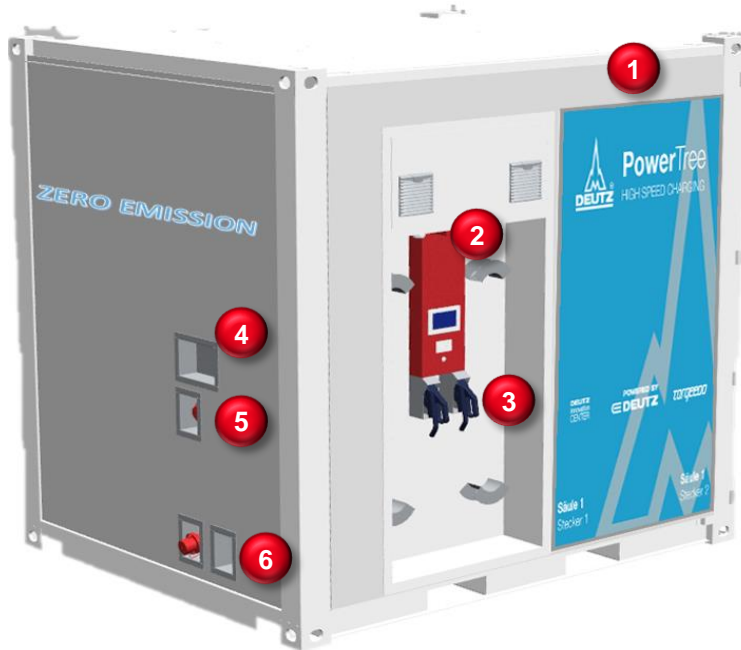
Technical data	
Dimensions	3.000 mm x 2.500 mm x 2.600 mm
AC Input	63 A @ 400 V (CEE)
Battery Capacity	126 kWh (modular)
Charging Points	2 x CCS + 2 x CEE (400 V + 230 V)
Fast Charging	1x 150 kW Charging Power at 800 V or 2 x 75 kW Charging Power at 800 V
AC Output	32 A @ 400 V + 16 A @ 230 V (CEE)
Operating Modes	On-grid + Off-grid DC- & AC-Charging of Applications
Fire Detection System	Yes
Lifetime	10 years
Total Weight	ca. 4.500 kg
DEUTZ Digital Service	Status of Fast Charger via Mobile Communications

63 A @ 400 V (CEE)  
is the same power connection as:



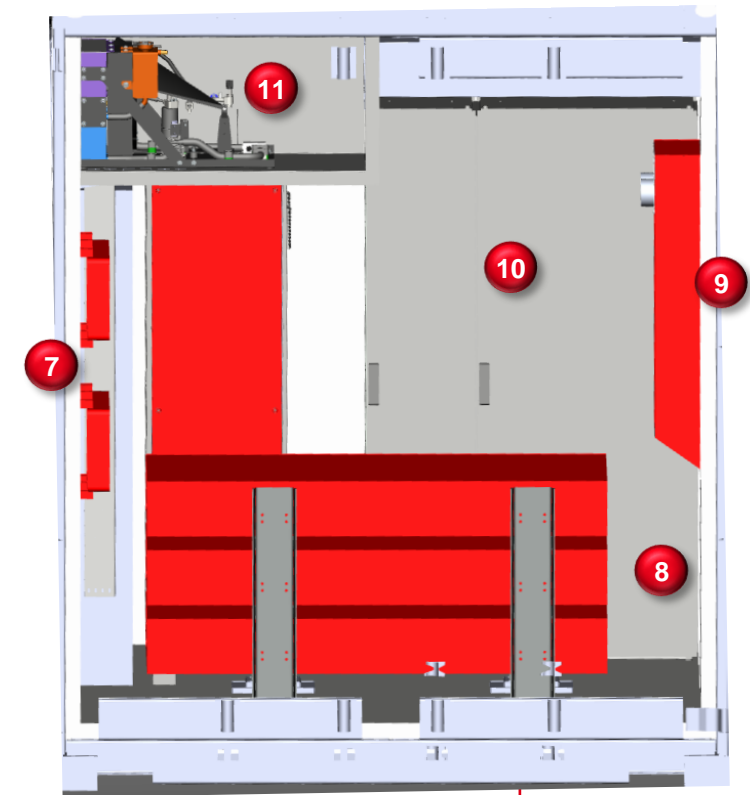
# DEUTZ PowerTree

## Description of interfaces and internal view – Prototype example



Front- / Site view

- 1** 10 ft. High-Cube-Seecontainer
- 2** Integrated DC Charger
- 3** Output  
CCS Typ 2 (800 V: 1 x 150 kW or 2 x 75 kW (opt.))
- 4** HMI  
Start and Control of the System
- 5** Output  
230 V 16A / 400 V 32A
- 6** Power Supply  
63 A / 400 V CEE
- 7** 2 x 22 kW Charger
- 8** 3 x HV-Battery á 42 kWh = 126 kWh
- 9** Containerventilation
- 10** Control Cabinets Installation  
space for inverter, PT control, telemetry, etc.
- 11** Cooling System for HV-Batteries



Internal view

# DEUTZ PowerTree

Mobile Plug & Play Fast Charger for Off-highway applications

SET UP

PLUG-IN

Charge



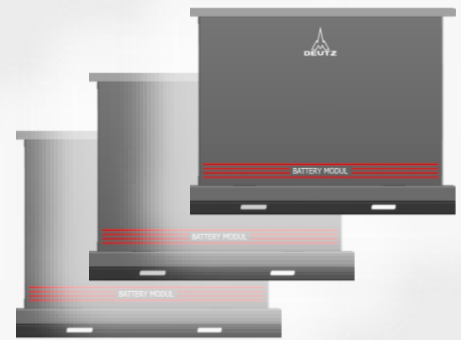
- No trained personnel necessary
- Short commissioning and deinstallation time
- 'Off-grid' stand-alone operation through battery storage
- Maximum flexibility through mobile use
- Use despite poorly developed local infrastructure
- Robust container solution for construction site operation
- Enables capacity reduction of the battery and more compact installation dimensions in the construction machine / vehicle



# DEUTZ PowerTree

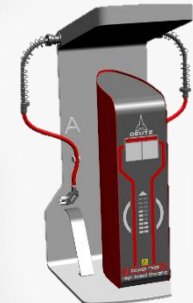
## Modular Concept

**Extendable  
battery storage**



**Scalable up to 252 kWh**

**Charging system  
with 800 V**



**Additional charging points possible**

**Fast-charging technology**



**Fast charging power up to 150 kW**

**MOBILE SYSTEM**



**SCALABLE CONTAINER  
SOLUTION**

# DEUTZ PowerTree

## DEUTZ Digital Services



### Basic functions

- Operating data of the charging station

### Advanced functions

- PowerTree – App
- Operating data from the e-vehicle (based on CCS protocol)
- Billing management
- Geofencing
- Fire alarm
- Fleet management
- Remote maintenance





# DEUTZ PowerTree

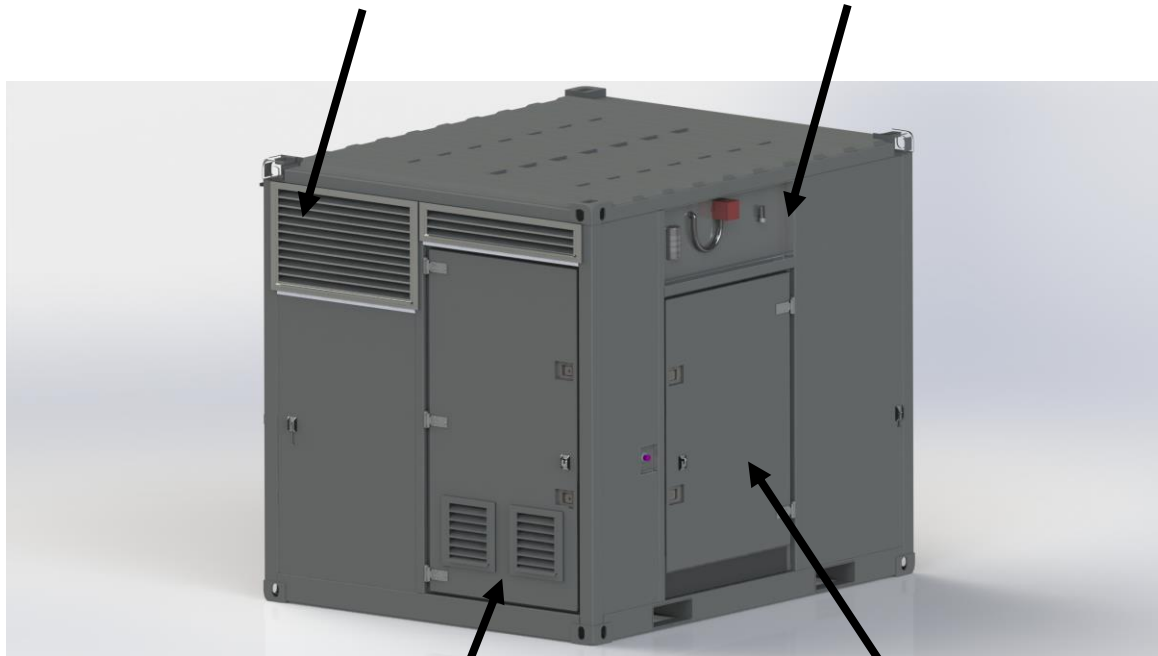
Development 1.5



Installation and maintenance of the TMS system

Keine Bauteile außerhalb der Containerkontur

Service door for battery and access to the interior



Service door

Charging port



Service door for switch cabinet control

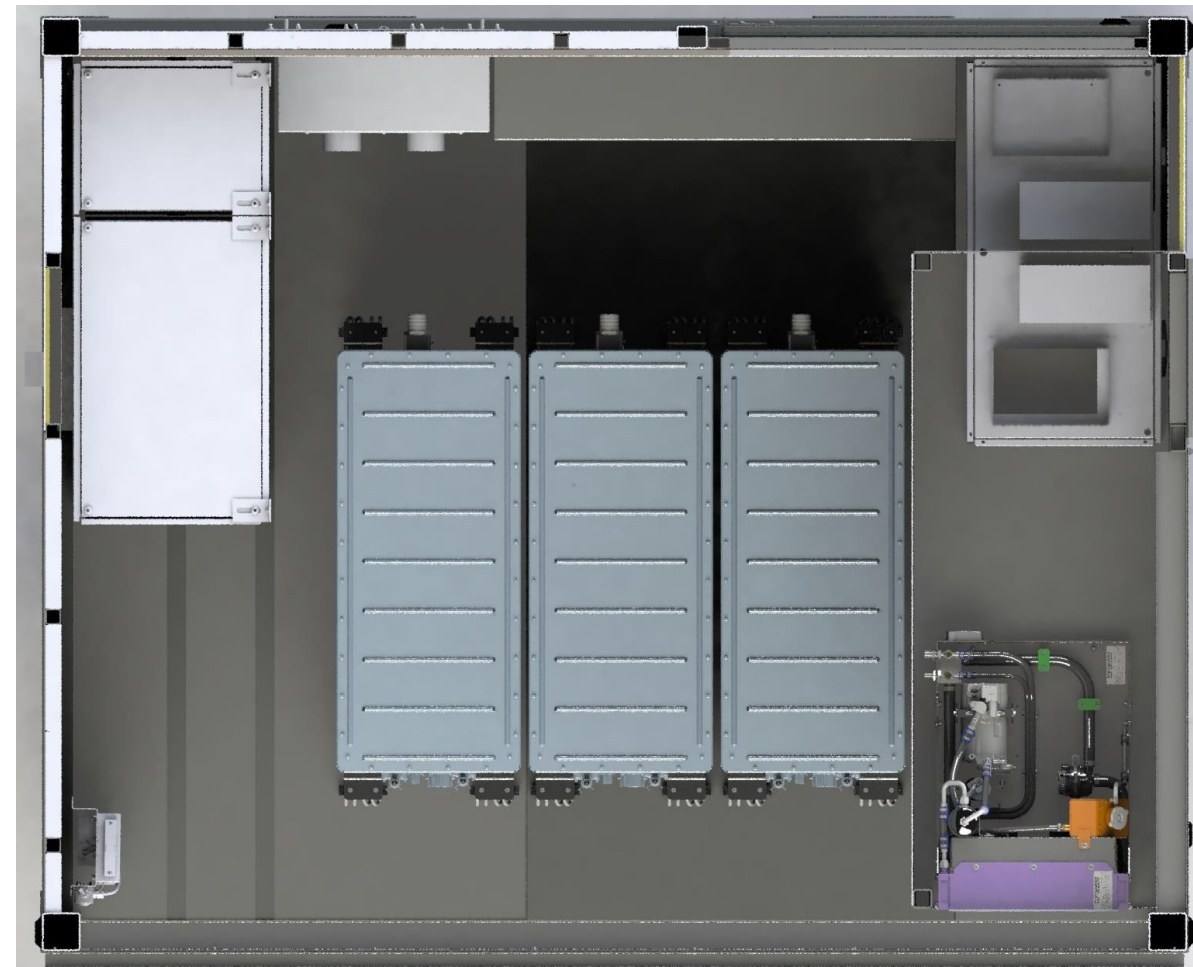
Lifting and transport with forklift and crane possible

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## Weiterentwicklung 1.5



- Installation space analysis for alternative batteries (DEUTZ batteries )



# DEUTZ PowerTree

## Concepts control unit





# DEUTZ PowerTree

Extended off-road possible applications



# DEUTZ PowerTree

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# Disclaimer

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This presentation contains forward-looking statements that are subject to various risks and uncertainties. Future results could differ materially from those described in these forward-looking statements due to certain factors, e.g. changes in business, economic and competitive conditions, regulatory reforms, foreign exchange rate fluctuations, uncertainties in litigation or investigative proceedings, and the availability of financing. DEUTZ does not undertake any responsibility to update the forward-looking statements in this presentation.



# Thank you!

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**DEUTZ AG**

Ottostr. 1

51149 Köln

Telefon: +49 (0) 221 822-0

Fax: +49 (0) 221 822-3525

E-Mail: [info@deutz.com](mailto:info@deutz.com)

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