

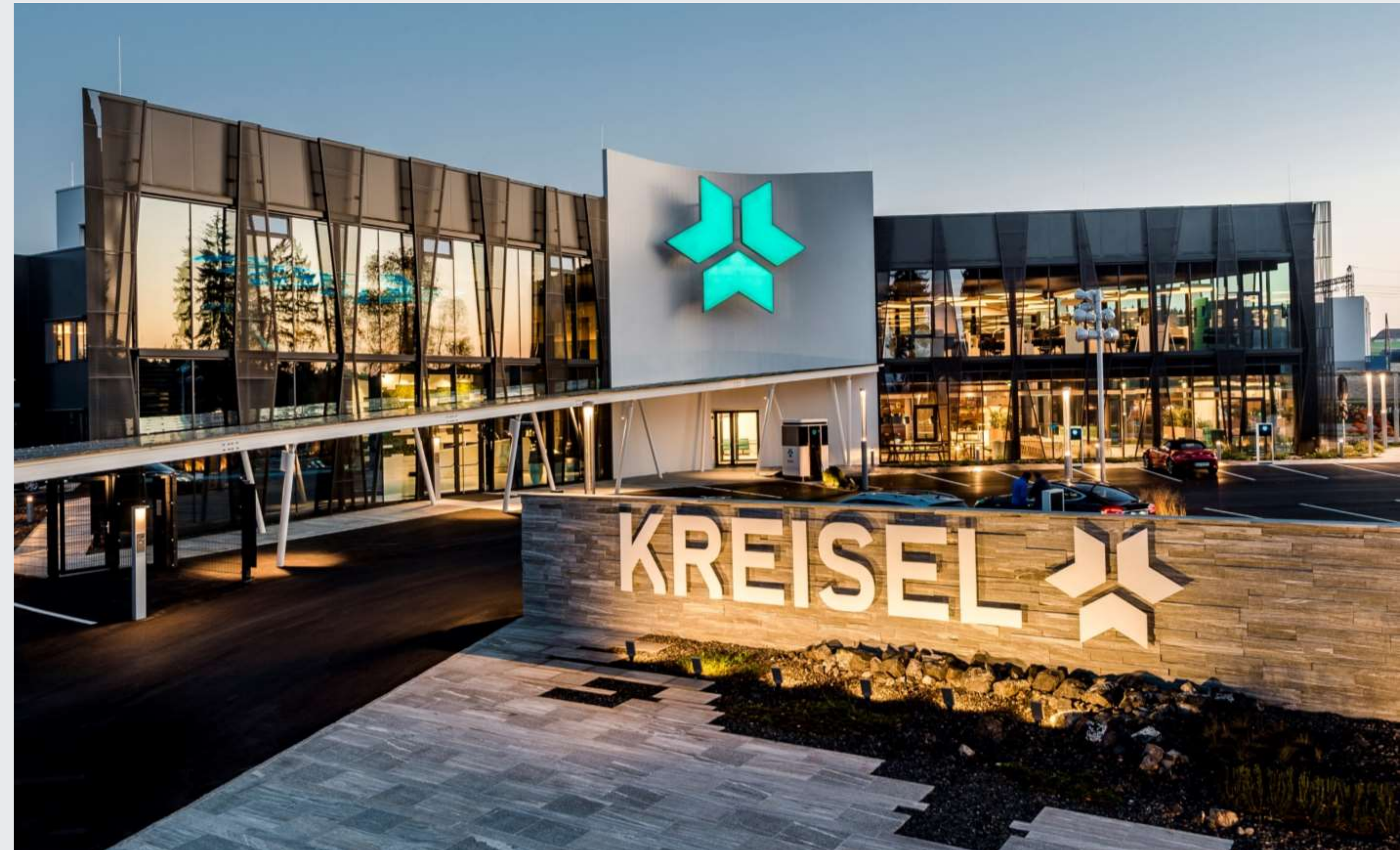
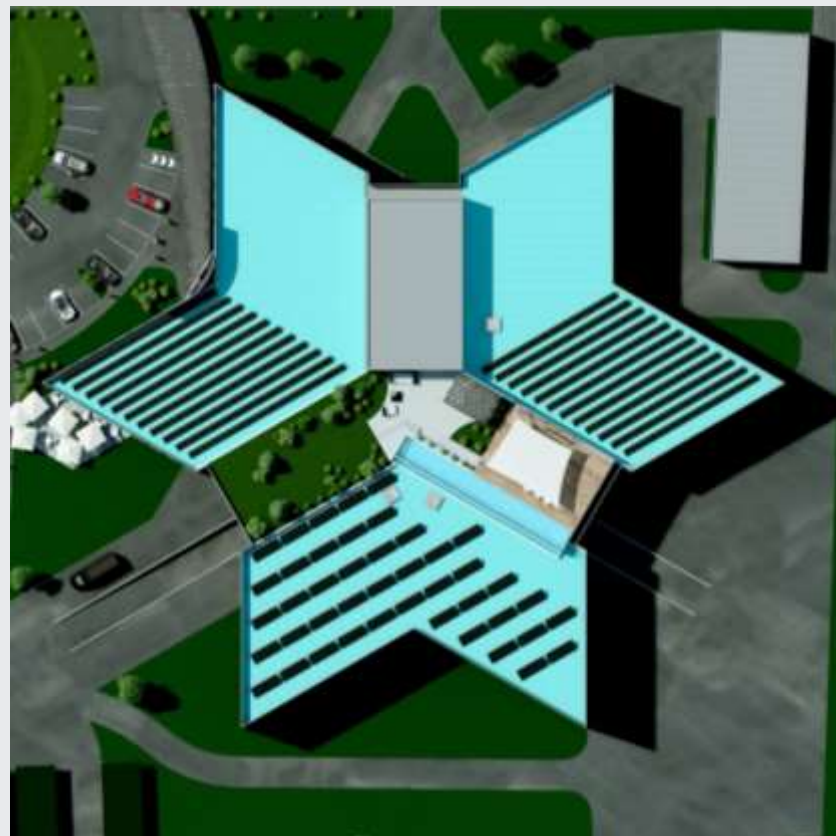






# KREISEL

## HEADQUARTER

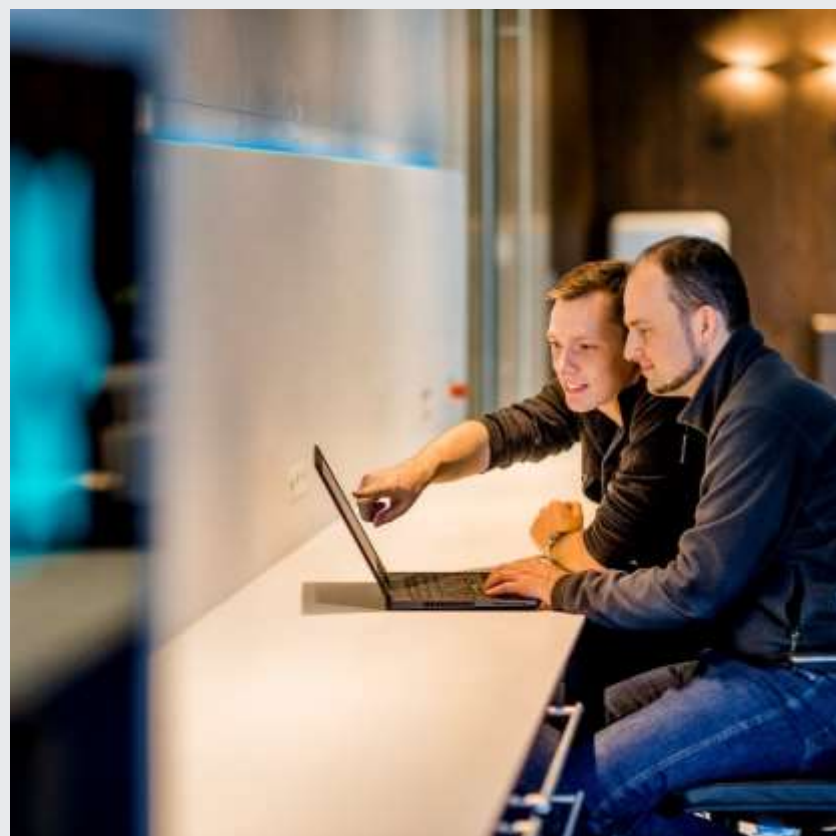
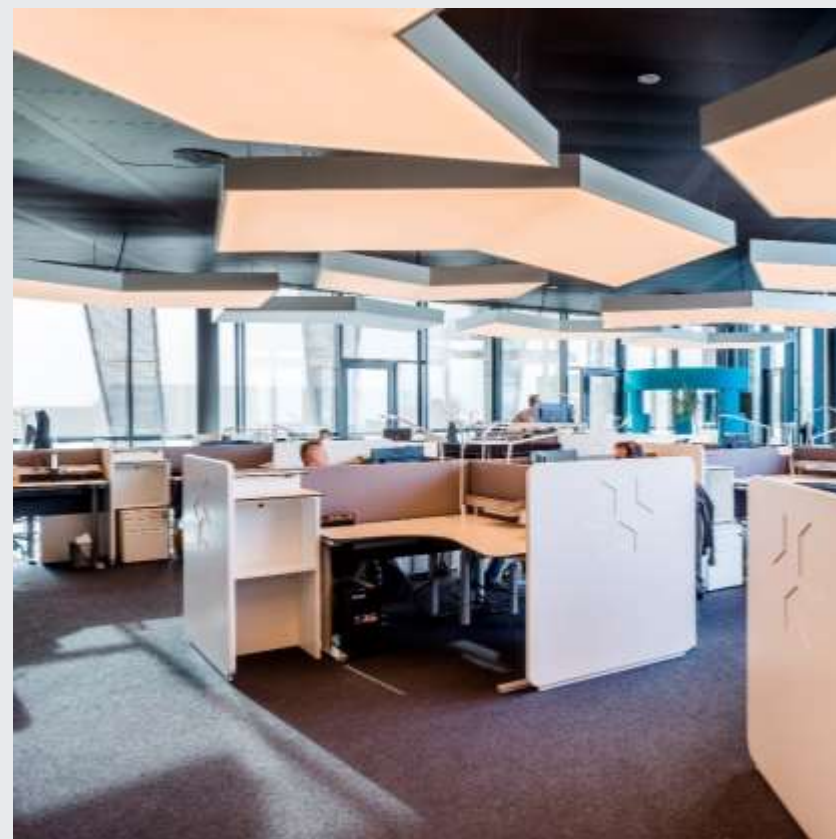






# HEADQUARTERS RAINBACH

## OUR WORKING WORLD







# HEADQUARTERS RAINBACH

## PRODUCTION





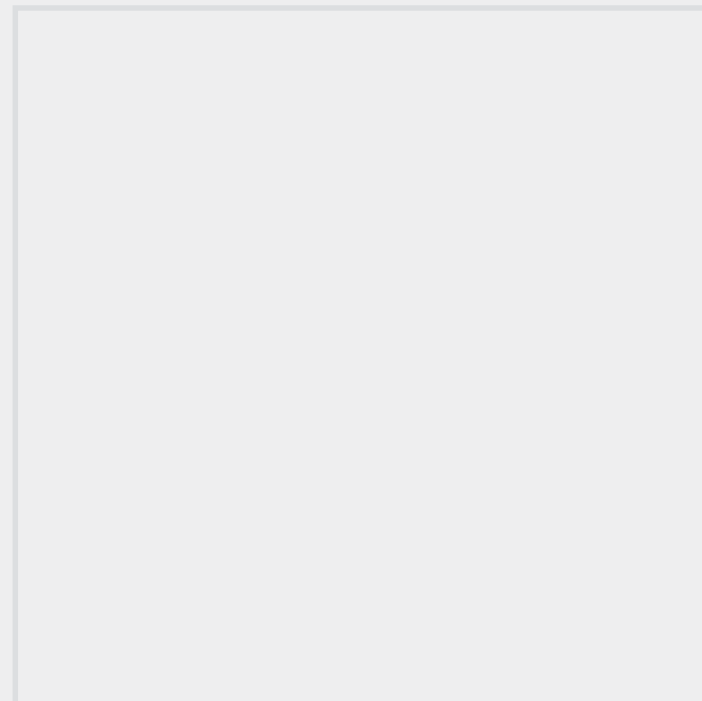
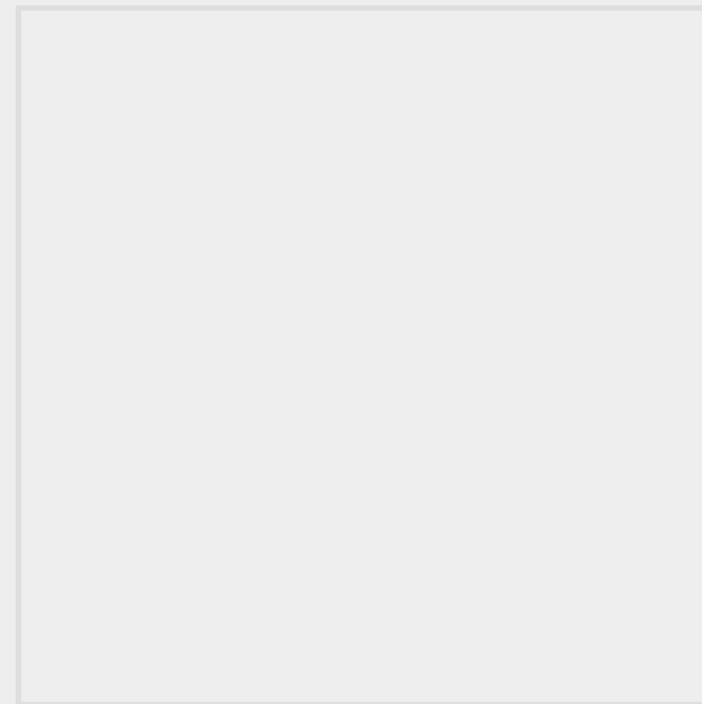
# KREISEL DIVISIONS

TO ELECTRIFY THE WORLD

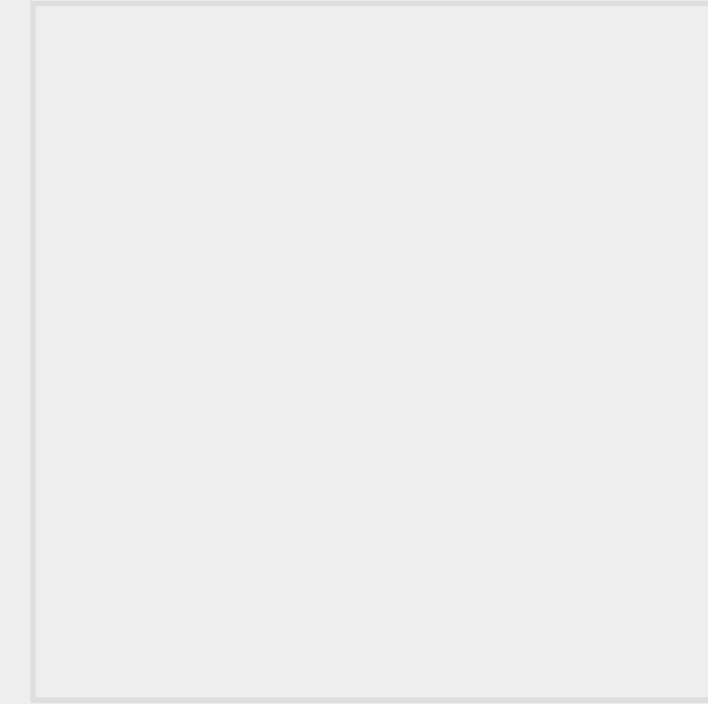
Markus Kreisel  
CEO „Electric“



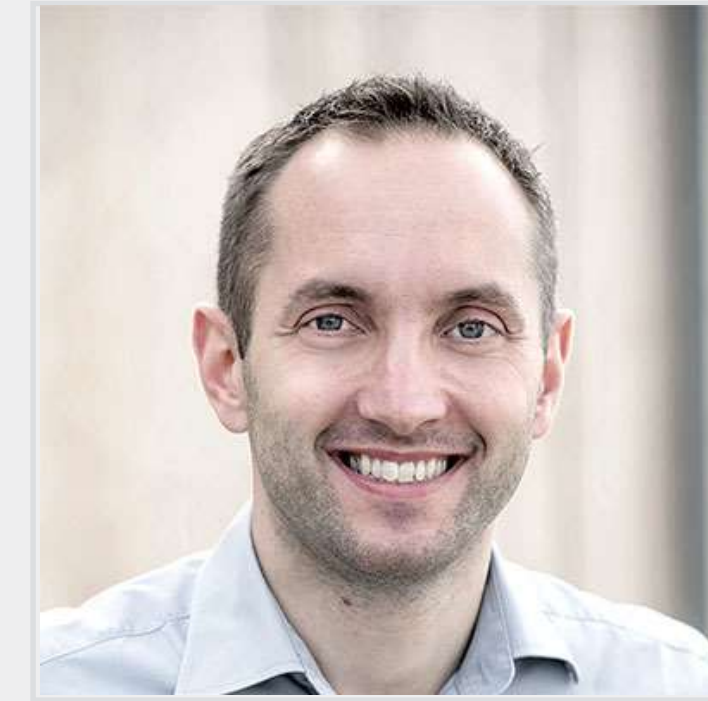
Johann Kreisel  
CPO „Electric“



Philipp Kreisel  
CTO „Electric“



SYSTEMS



Walter Kreisel  
CEO „Systems“

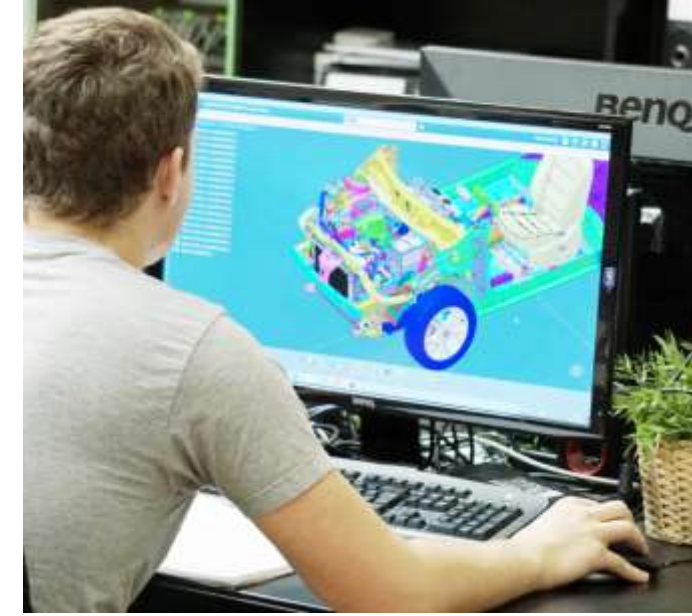




Battery Technology



Integration & Power Train



Construction & Serial



Software



Battery License

ELECTRIC MOBILITY SOLUTION PROVIDER  
**KREISEL ELECTRIC**



**KREISEL**

TECHNOLOGY LEADERSHIP IN ELECTRIFYING THE WORLD

## KREISEL SYSTEMS

STATIONARY ELECTRIC SOLUTIONS



Wallbox  
< 22 kW



Charger  
< 22 kW



Power Charger  
50 | 150 | 350 kW



DC Home Battery  
10 | 14 | 20 | 28 kW



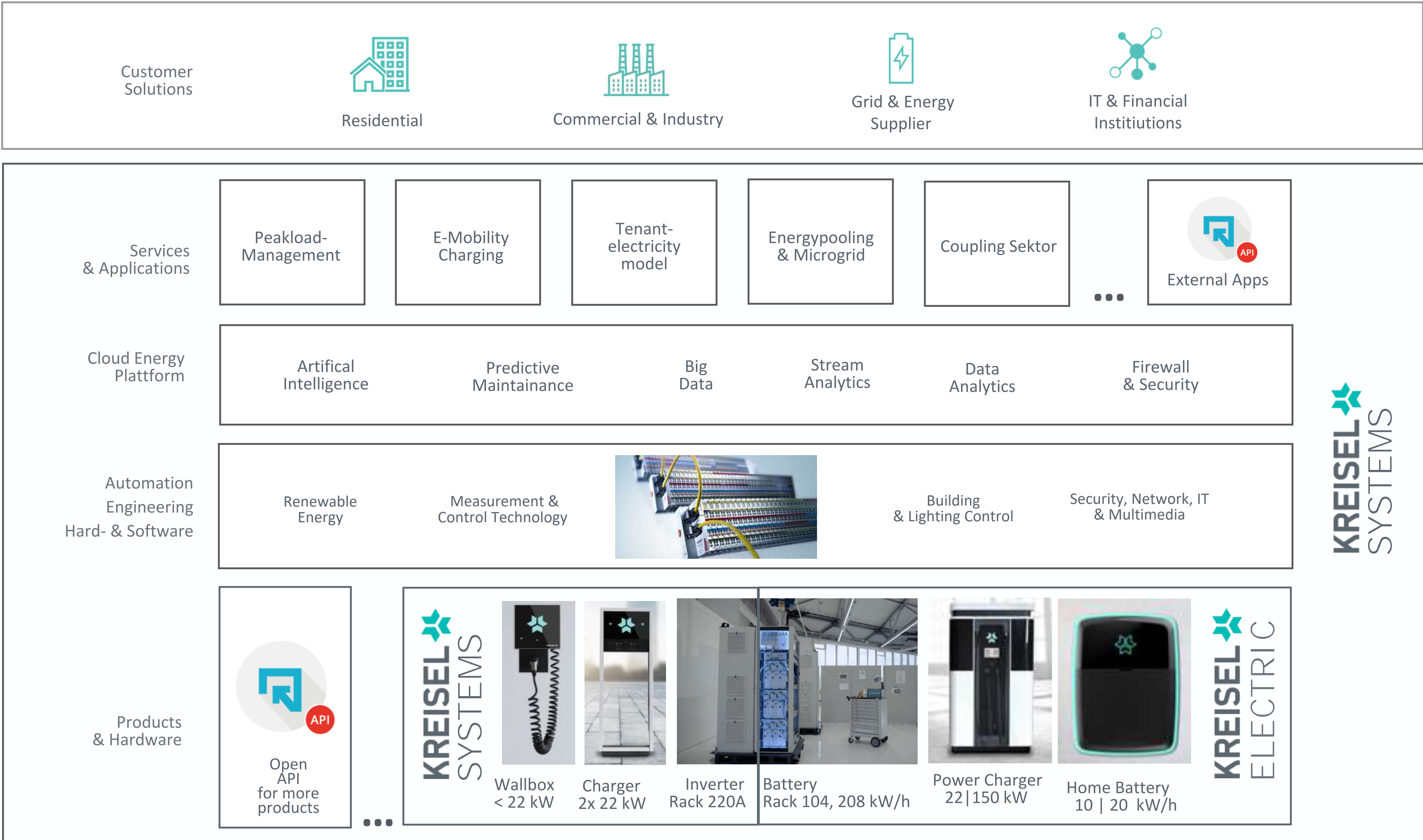
Commercial & Industry Battery  
104 | 208 kW



Partner Program



walterkreisel gmbh – „KREISEL SYSTEMS“, a KREISEL  cooperati on partner – Busi ness Model



**KREISEL**  
SYSTEMS

Lighthouse & large scale projects

Scalable projects by SYSTEMPARTNER

Manufacturer





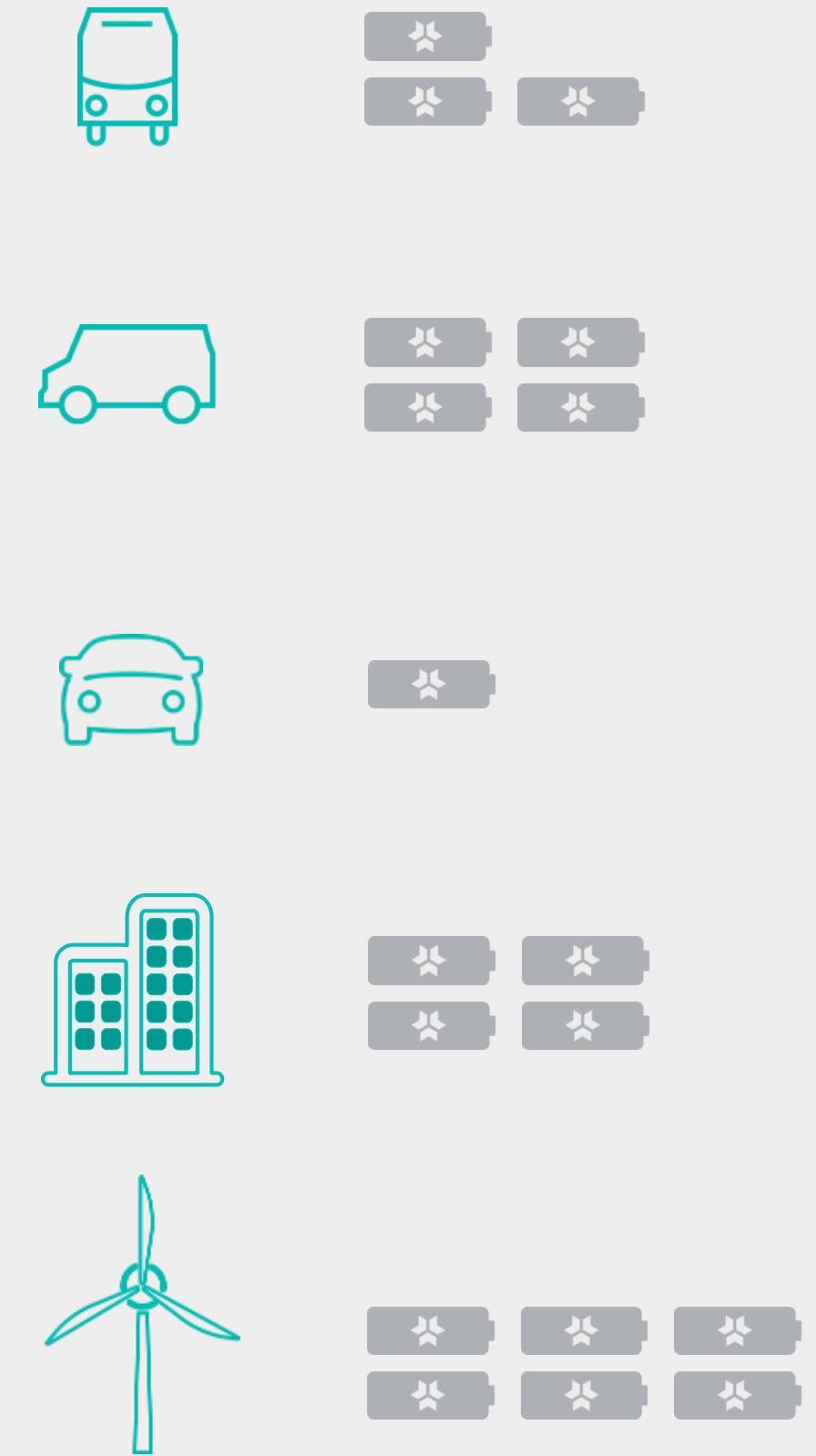
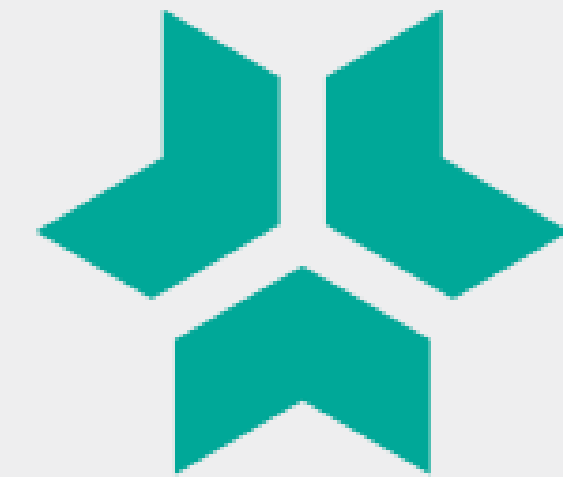
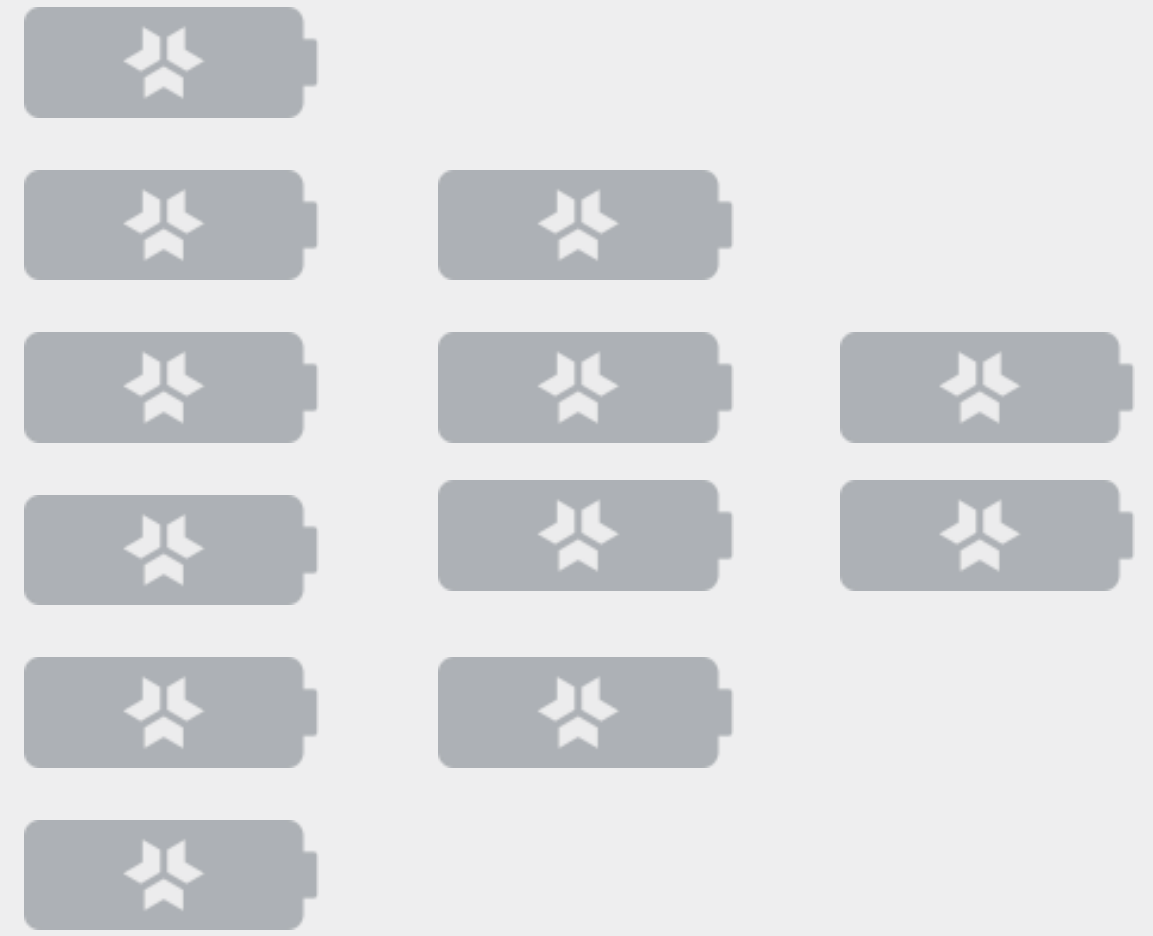
# THE CORE





# „THE“ BATTERY SOLUTION

FOR A FULL ELECTRIC WORLD





# THE KREISEL BATTERY

NUMBER 1 SOLUTION WORLDWIDE



1.95 DM<sup>3</sup>/KWH  
ENERGY DENSITY



4.1 KG/KWH  
WEIGHT



- ▶ Roundcells 18650 / 21700
- ▶ Patented technology
- ▶ Liquid cooling & heating version:  
4,3 kg/kWh und 1,95dm<sup>3</sup>/kWh
- ▶ -20°C - +70°C
- ▶ Integrated security concept
- ▶ 15sec production time per kWh



Development project of 3 years!





# STATIONARY PRODUCTS





# MAVERO

## HOME ENERGY STORAGE



- Modular Design: 10,14, 20, 28kWh
- Very high efficiency of 96%
- 10 years warranty
- Lifetime >5000 cycles
- Power output 4,8kW
- DC-DC converter is already installed
- Can be used as an off-grid system





**NEW**

# ENERGY RACK

INDUSTRY & COMMERCIAL RACKSTORAGE



- Modular Design: 104, 208, 416, ... kWh
- Power output per Rack 150kVA
- Very high efficiency of 94%
- Theoretical 100% efficiency > to Heat
- 10 years warranty
- Lifetime >5000 cycles
- DC-AC converter is already installed
- Can be used as an off-grid system





**NEW**

# POWER CHARGER

FAST AC & DC CHARGING WITH BATTERY



- 1x AC 22kW Typ 2
- 1x DC 120kW CCS 400V
- Built in 104kW/h Battery
- Only 44kW net connection
- RFID & QR Code access
- Can be installed on all power connection very low installation costs and flexible in location
- Compatible with all KREISEL CHARGERS & LOAD MANAGEMENT





# SMART CHARGER

## DESIGN COLUMN WITH LIGHT



- ▶ Twincharger
- ▶ 11 or 22kW Typ 2
- ▶ RFID & QR Code access
- ▶ Dynamic load management
- ▶ Compatible with KREISEL LOAD MANAGEMENT, MAVERO & ENERGY RACK





**NEW**

Presentation @ **inter solar** available July 2019



# SMART WALLBOX

CHARGE YOUR CAR AT HOME OR AWAY

- Single wallbox with socket or optional with 5m spiral cable
- AC 3phase 22 kW Typ2
- Ready for dynamic load management
- RFID & QR Code access
- Optional individual grafik on glass possible
- Compatible with KREISEL LOAD MANAGEMENT, MAVERO & ENERGY RACK







# MOBILE APPLICATIONS



# SOLAR STRATOS



1<sup>ST</sup> FULL ELECTRIC FLIGHT TO STRATOSPHERE

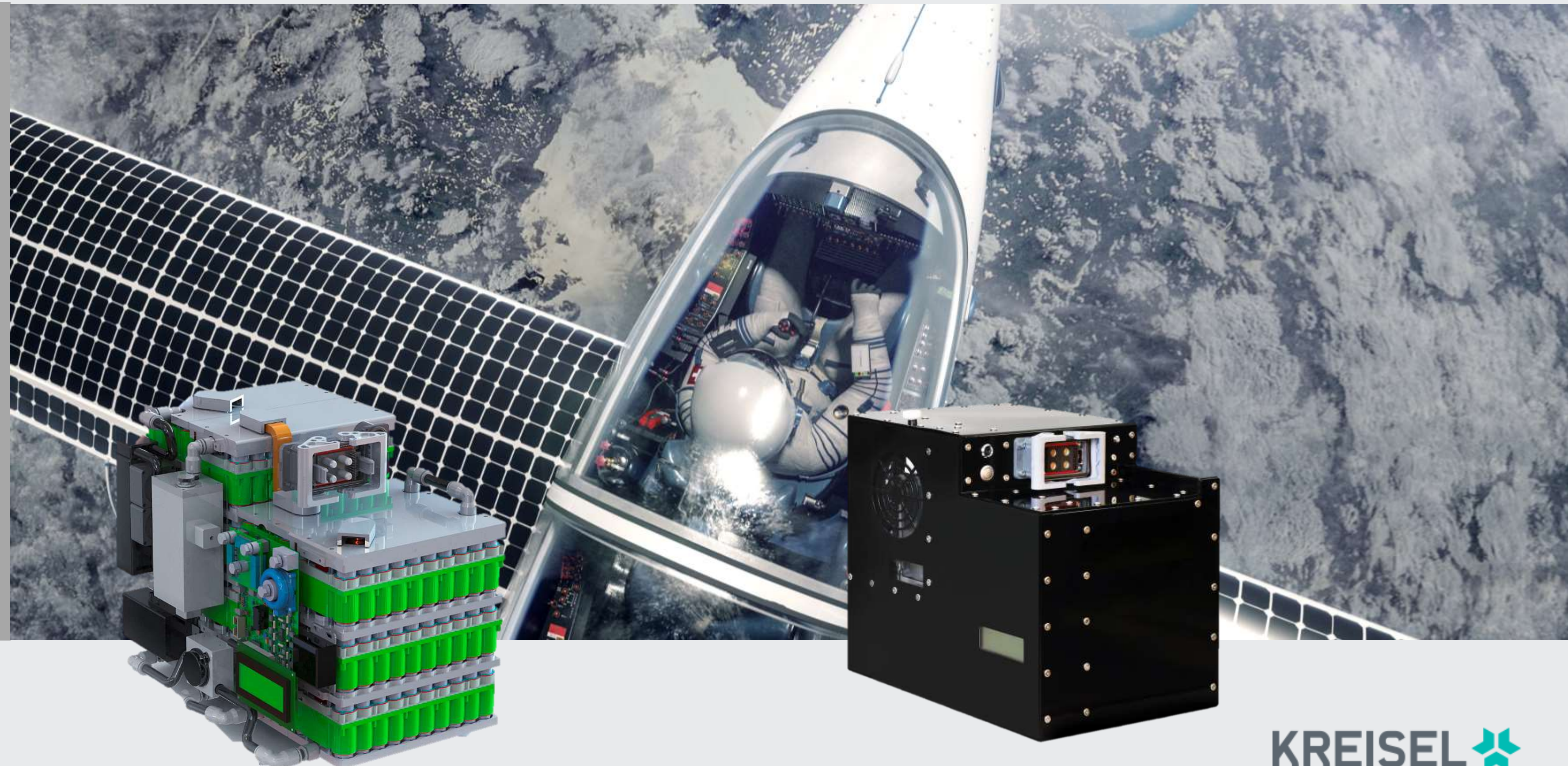


# SOLAR STRATOS

## AIRCRAFT BATTERY 7,41 KWH



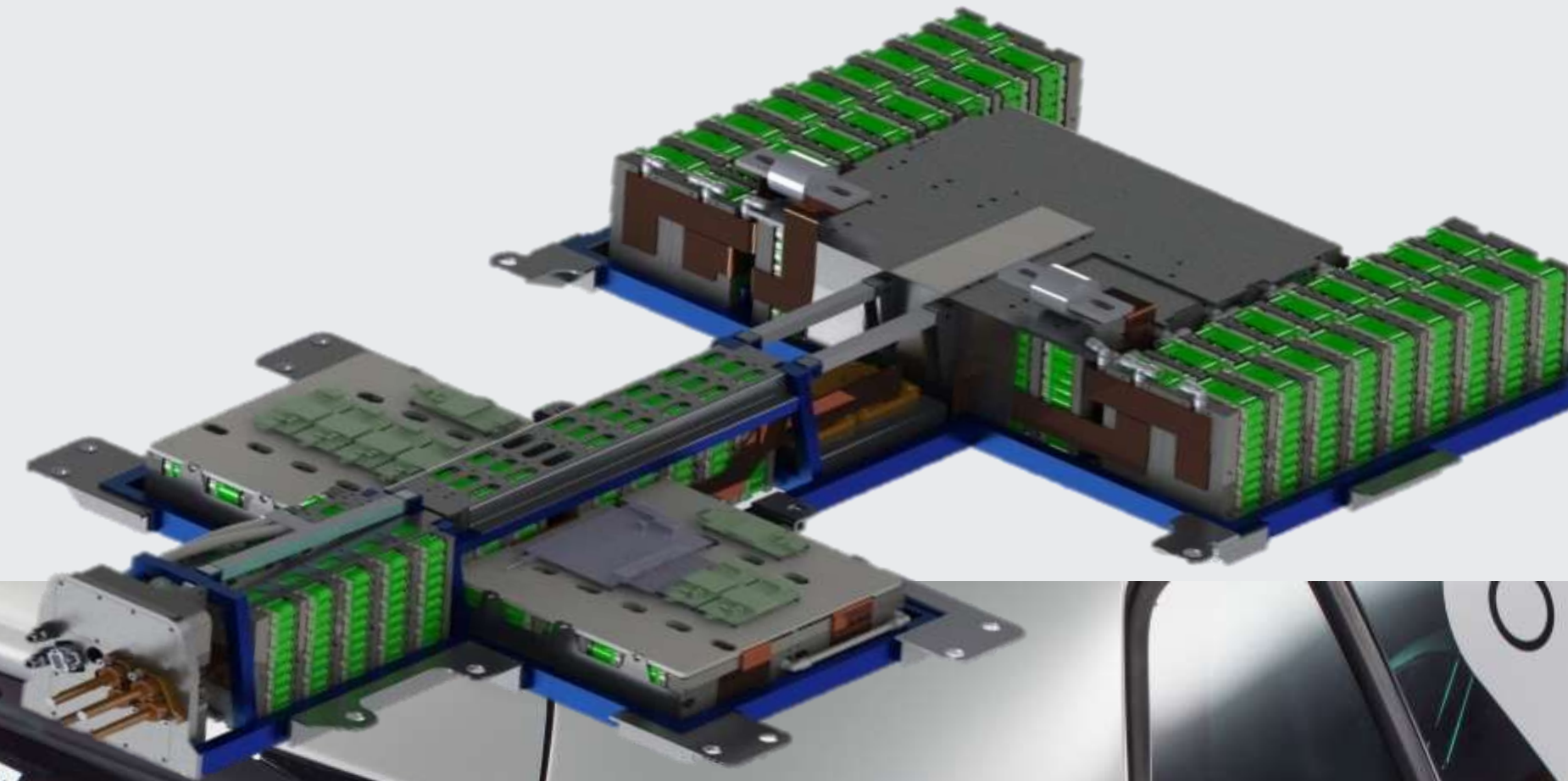
- Liquid cooled version
- Incl. power distribution unit with plug for charger & three electric motor
- Optimized for vibration
- Very safe battery due to liquid circulation direct at the cells





# BATTERY PACKS

## VW E-GOLF BATTERY PACK



- 55,7 kWh displayed range about 430 km (original 24kWh/200km)
- No additional weight! 330kg
- 18 min charging 80% SOC (prepared)
- Liquid cooled/heated battery system



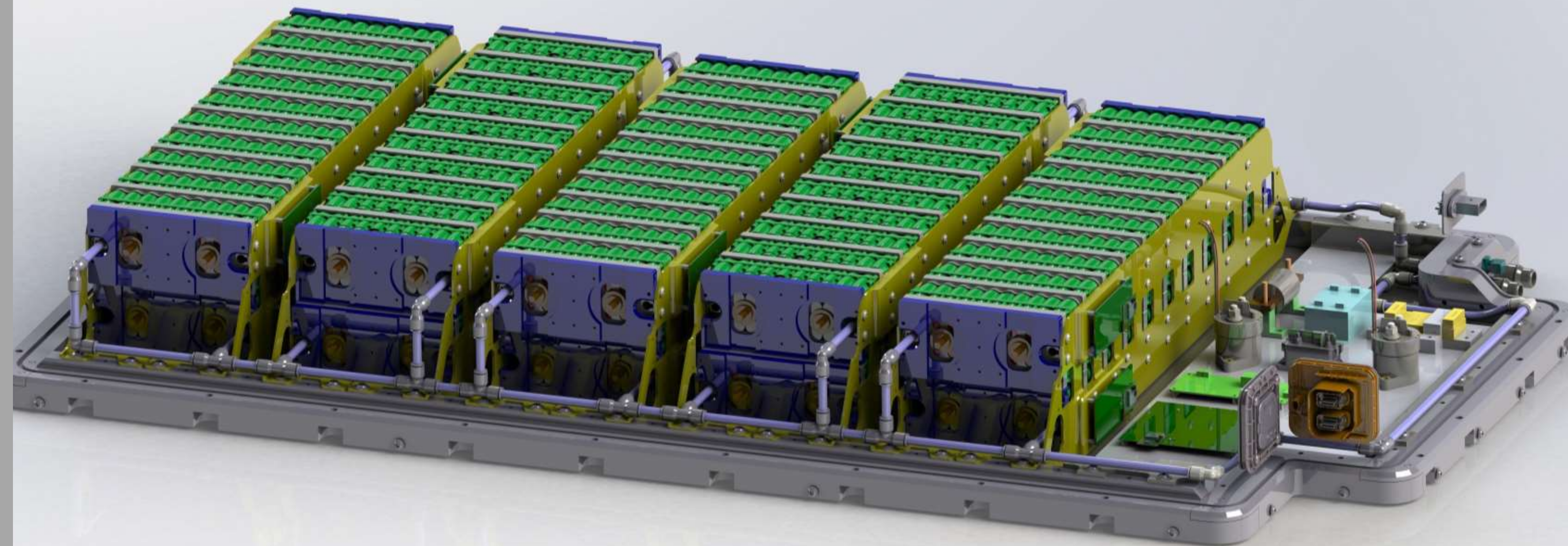


# BATTERY PACKS

## BMW I 3 BATTERY PACK



- 55kWh displayed range about 420 km (original 24kWh/200km)
- Only 145kg additional weight
- 18 min charging 80% SOC (prepared)
- Liquid cooled/heated battery system
- LION Smart Wireless BMS with LINEAR Technology DUST modules







# HTW 100 E<sup>3</sup>

## BATTERIE FÜR HYBRID-GLEISBAUMASCHINE

- ▶ Redundante Betriebssicherheit
- ▶ Ermöglicht neue Einsatzgebiete
- ▶ 94% Wirkungsgrad
- ▶ Ersparnis von >100€ / h
- ▶ -10 dBA Lärmreduzierung







# VDL MIDBASIC UND MIDCITY

ELEKTRISCHE BUSSE FÜR DEN  
PERSONENTRANSPORT

- Serialproject
- 3,5t and 5,5t model
- Up to 300km
- Cooperation with VDL Bus & Coach (Netherland)





# VEHICLES

## G-WAGON FOR ARNOLD SCHWARZENEGGER



- 80 kWh displayed range about 350 km
- 18 min charging 80% SOC (prepared)
- Liquid cooled/heated battery system
- 0-100km/h in 5,5s





# VEHICLES

G-WAGON FOR  
ARNOLD SCHWARZENEGGER







# ELEKTRISCHER HUMMER H1

ARNOLDS DREAM COME TRUE

- 100 kWh capacity
- 360 kW
- 3.300 kg weight
- Worldwide's first allelectric HUMMER H1







THANK YOU!

