Technical University of Munich TUM School of Engineering and Design Institute of Automotive Technology



# **Real-World Labs**

Charging and Operations

## **Testing Opportunities –**



### Vehicle fleet & chargers

- Four dedicated EVs incl. full data access
- AC & DC chargers up to 350kW on site incl. OCPP smart charging



#### **CoSES** microgrid lab

- Represents five buildings
- Quadruple sector coupling

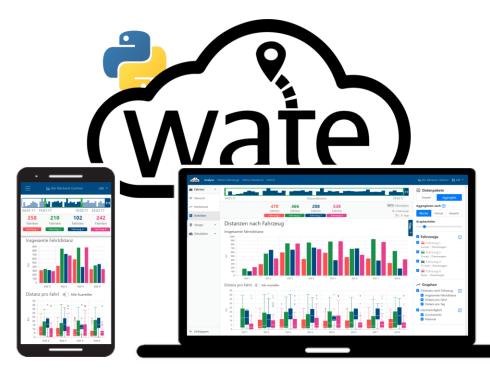
#### **In-house** dynamometer



Extended in-situ measurement setups

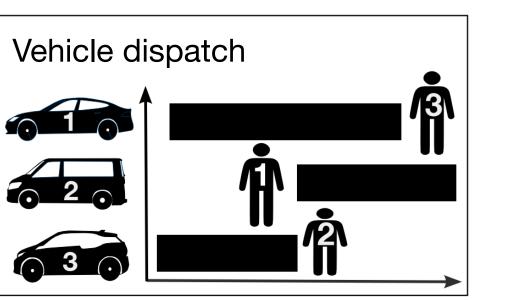
- max. 250 km/h & 280 kW
- Pedal robot for cycle tests

## Shaping the transition -



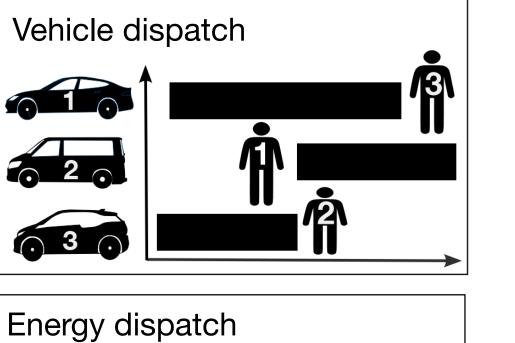


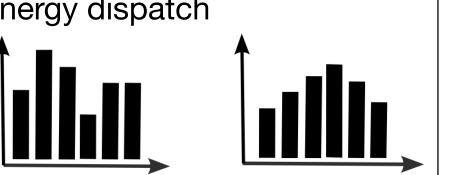
- Fleet size & composition for current moblity patterns
- Charging infrastructure



Automated fleet dispatch for commercial applications

- Most efficient order fulfilment
  - Minimum energy cost





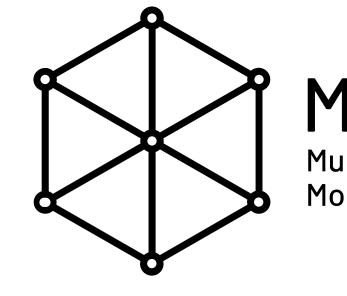
### -Showcasing innovation -

### **ComfficientShare:** Car sharing made appealing

- District-level availability for high user comfort
- Finding the balance between large and small scale
  - Insights on transitional behavor & battery aging
- Clever charging management minimizing electrical load







**M**Cube Munich Cluster for the Future of Mobility in Metropolitan Regions

**Multidisciplinary** cluster on Munich's urban mobility

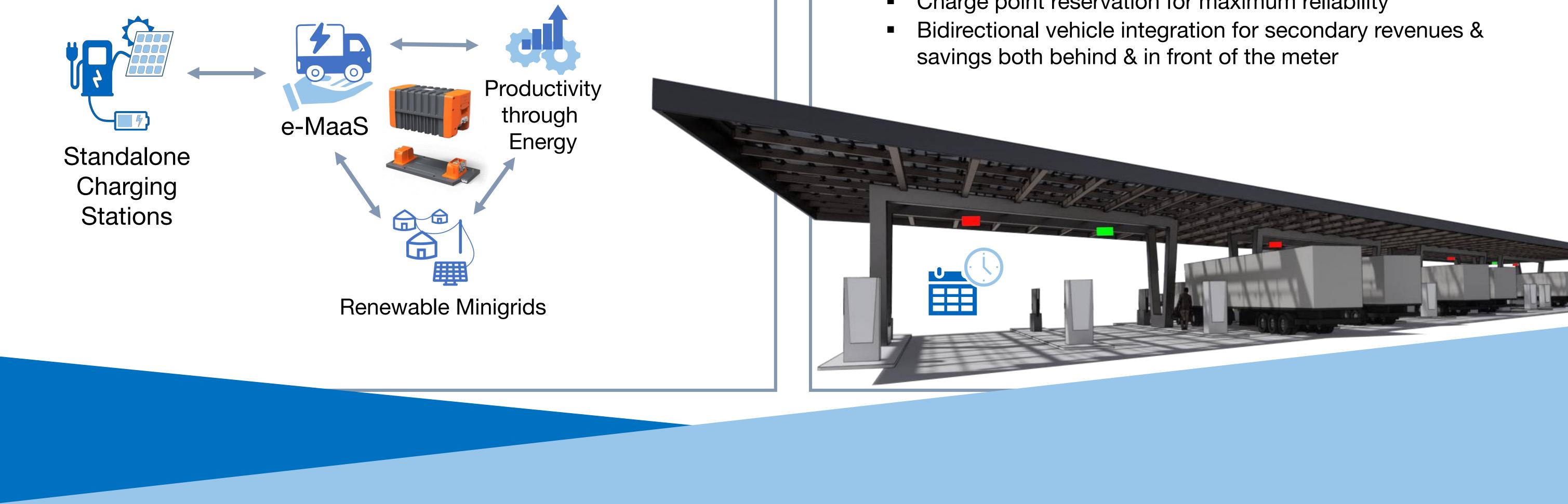
Electrify & Automate for quality of time, space & air

## Solving global challenges —



aCar & SolChargE: Unlocking the joint potential of e-mobility and rural electrification in Africa

- Integration of EVs in agricultural business
- Optimum share & design of charging solutions
- Modular battery systems for cost-efficiency





#### **NEFTON & SPIRIT-E:** Enabling battery electric HDVs

- Megawatt Charging for long-haul logistics
- "Shared Hub" pilot accelerating charger scale-up
- Charge point reservation for maximum reliability