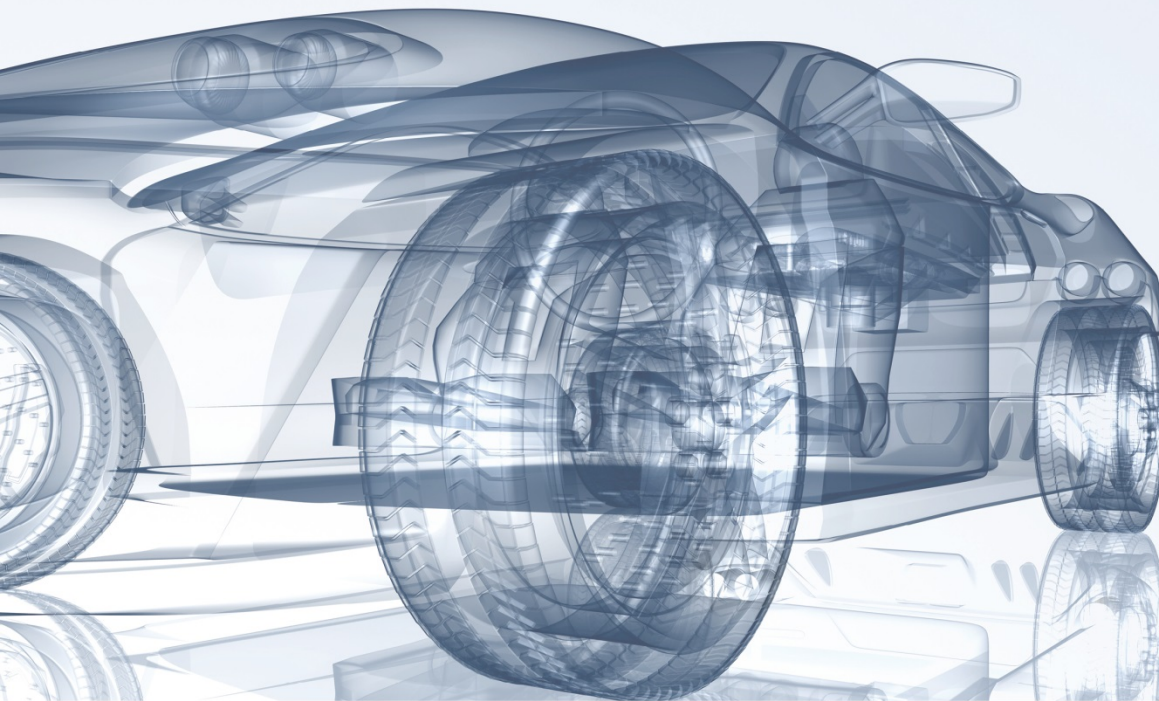


# evs 30



The 30th International  
Electric Vehicle  
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**October 9–11, 2017**  
Messe Stuttgart, Germany

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# Building a Smart Charging Ecosystem in Amsterdam

## *Getting ready for mass market of (next generation) EVs*

By Frank Geerts, Alliander & ElaadNL

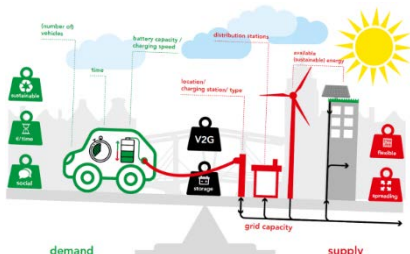
# Short introduction of partners

## Flexible charging - Amsterdam



**City of Amsterdam**

- 2.400 public charging stations
- 17.000 unique monthly users
- 70.000 monthly sessions



**Charge Wise:**  
Well-balanced Intelligent Sustainable Energy charging

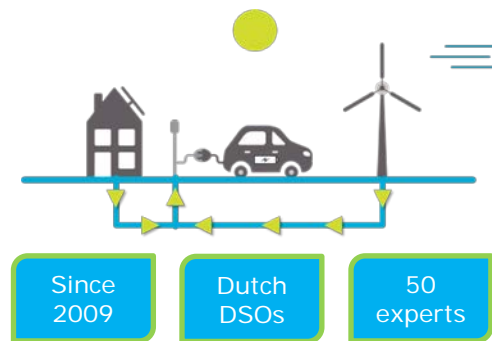


Part of **VATTENFALL**

Home, business & public  
8000+ chargepoints  
EU's most advanced city charging network  
Entire own fleet (3.500 vehicles) electric in 2023

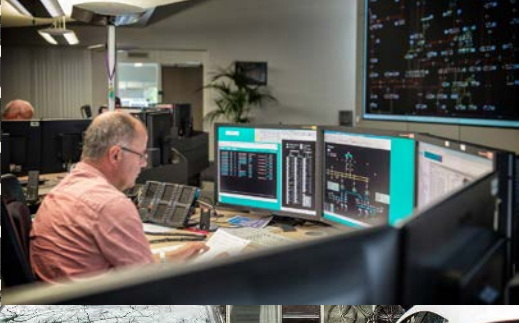


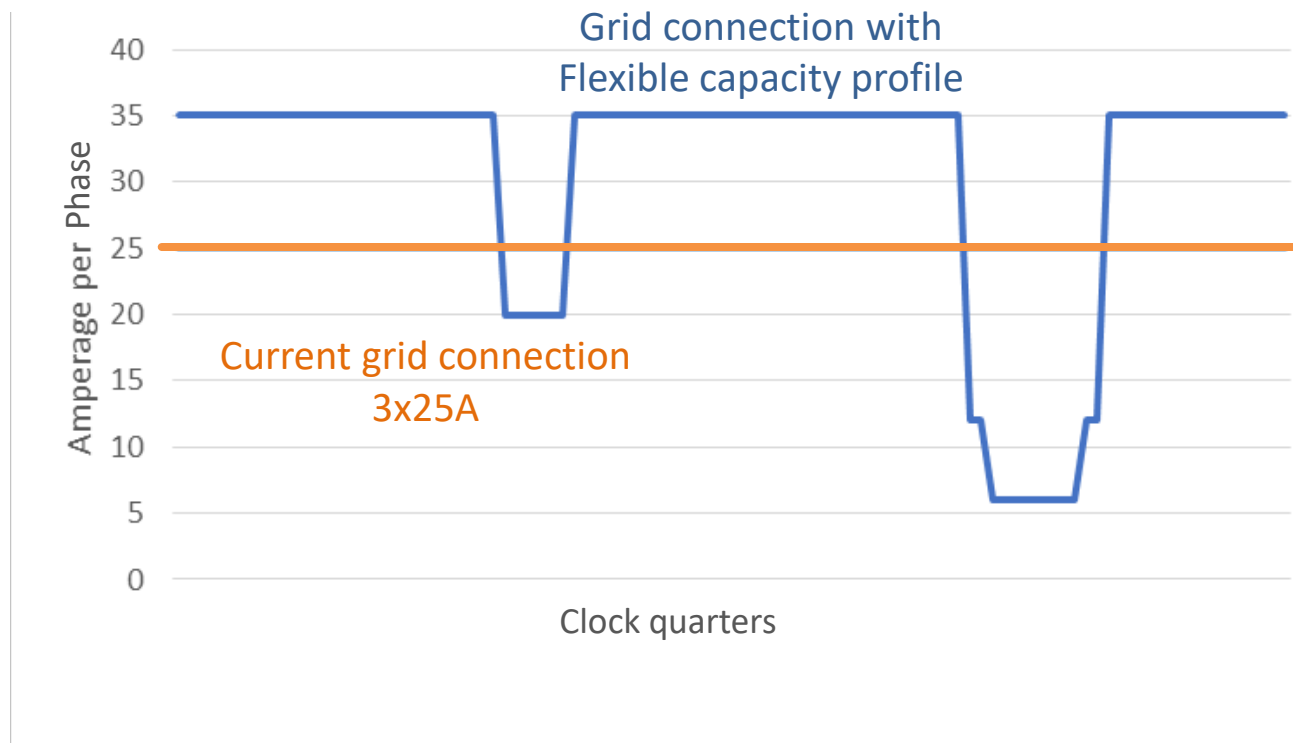
Number of customer connections 5.6m	Number of employees 7,150
Electricity outage duration 23.3 minutes	CO <sub>2</sub> -emissions 797kt
Revenue 1.6€ bn	Investments 680€ m
Total assets 7.7€ bn	Operating profit 282€ m



- Since 2009
- Dutch DSOs
- 50 experts

Proud founder off





# First in the world implementation of OCPP 1.6 Smart Charging messages



OCPP 1.6  
Smart  
Charge

22kW

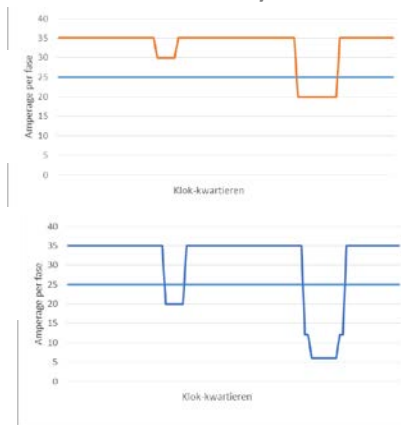


M

LS-grid  
Average  
load

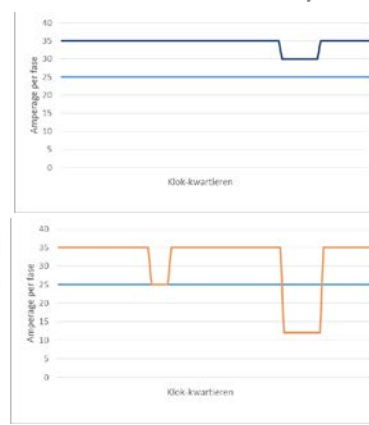
LS-grid  
Heavy  
load

Week day

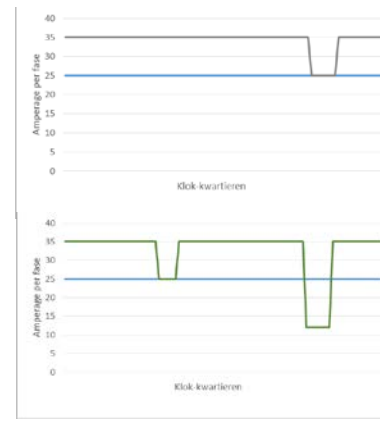


WINTER SEASON

Weekend day



Holiday



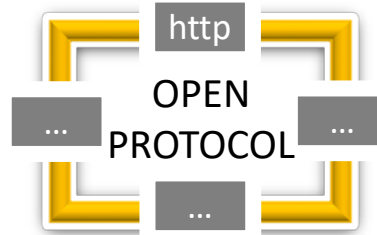
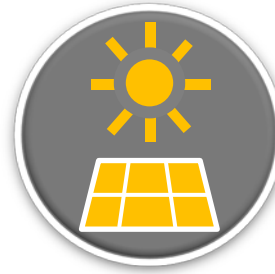
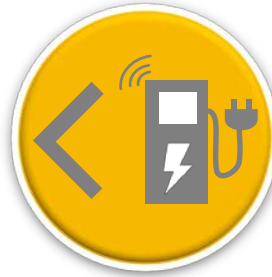
# Envisioned benefits for players in the Smart Charging Ecosystem

User

CPO

City

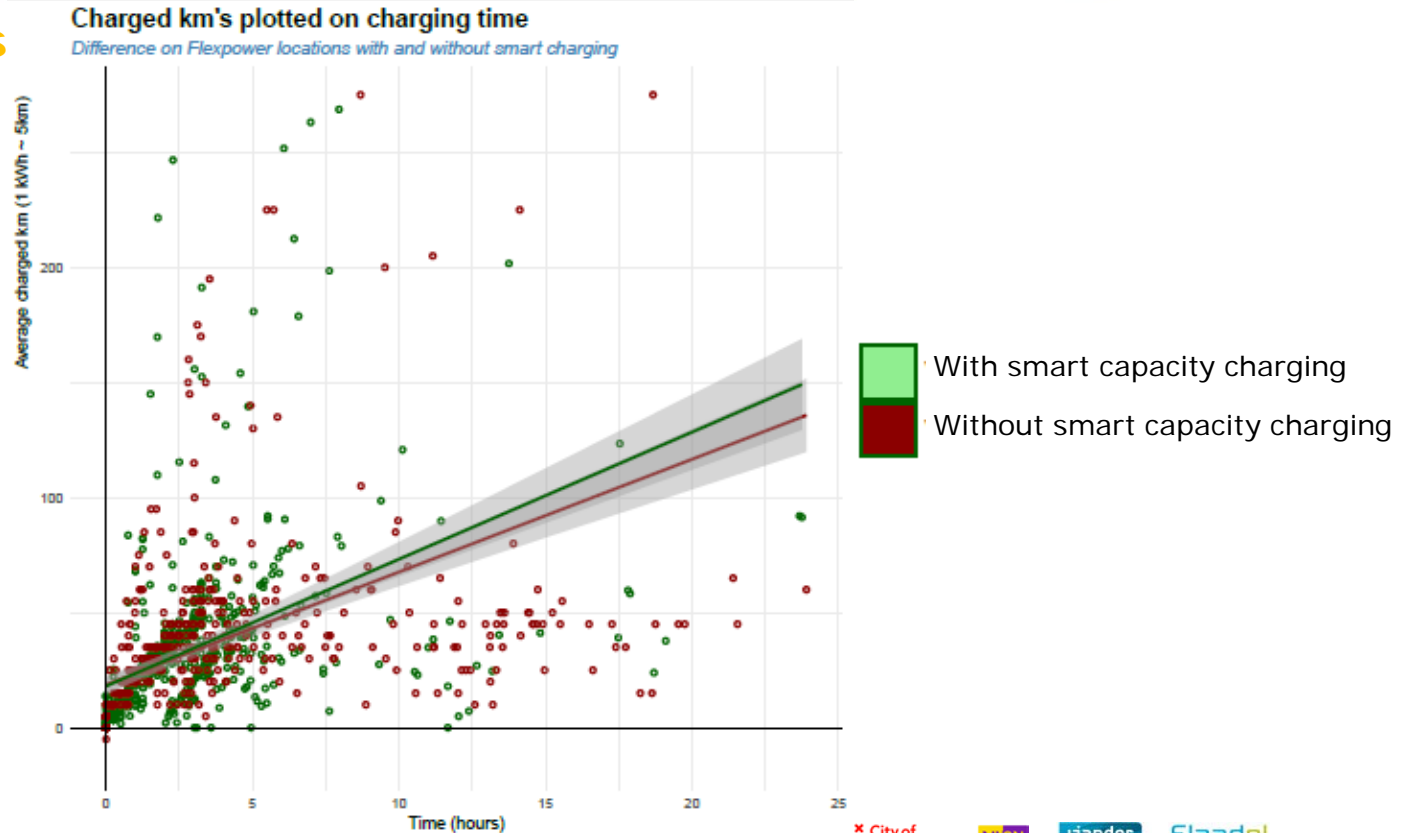
DSO





# No negative effect for users

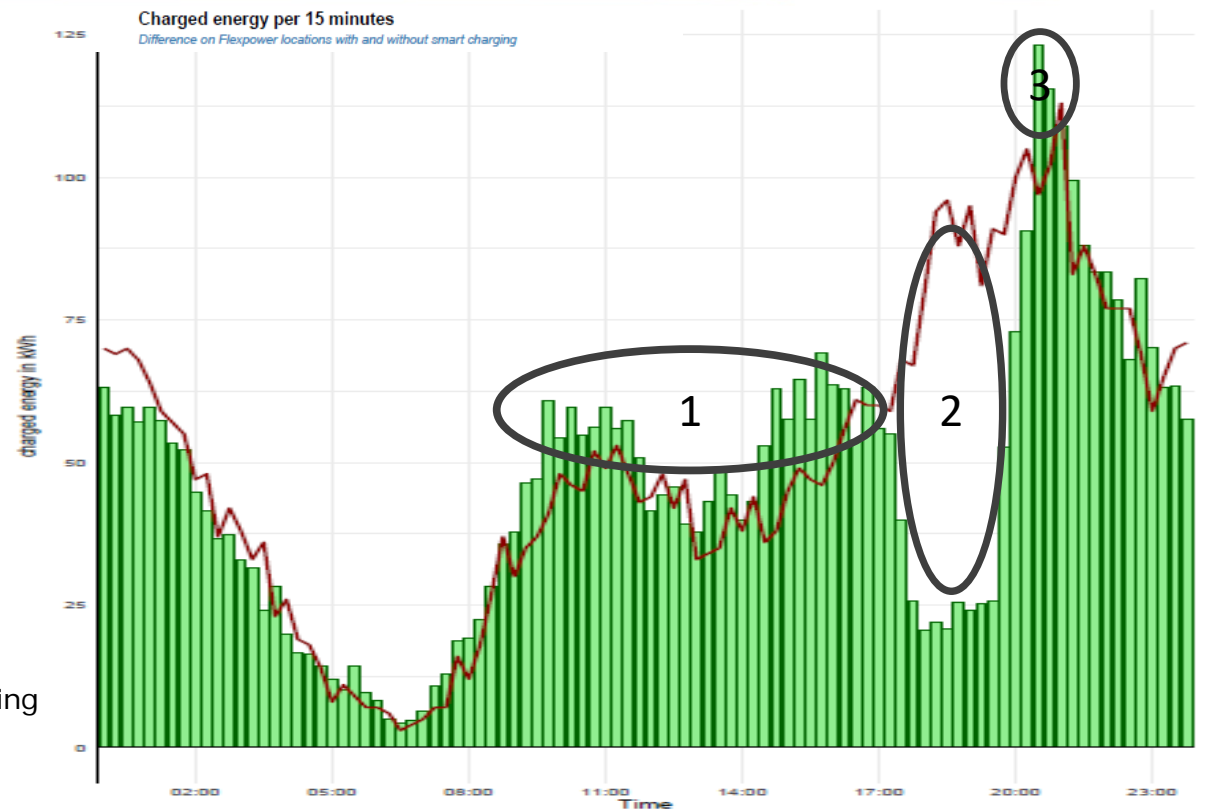
## Indicative results







# Flex Capacity profile speeds up charging & Effectively prevents local overload

## Indicative results

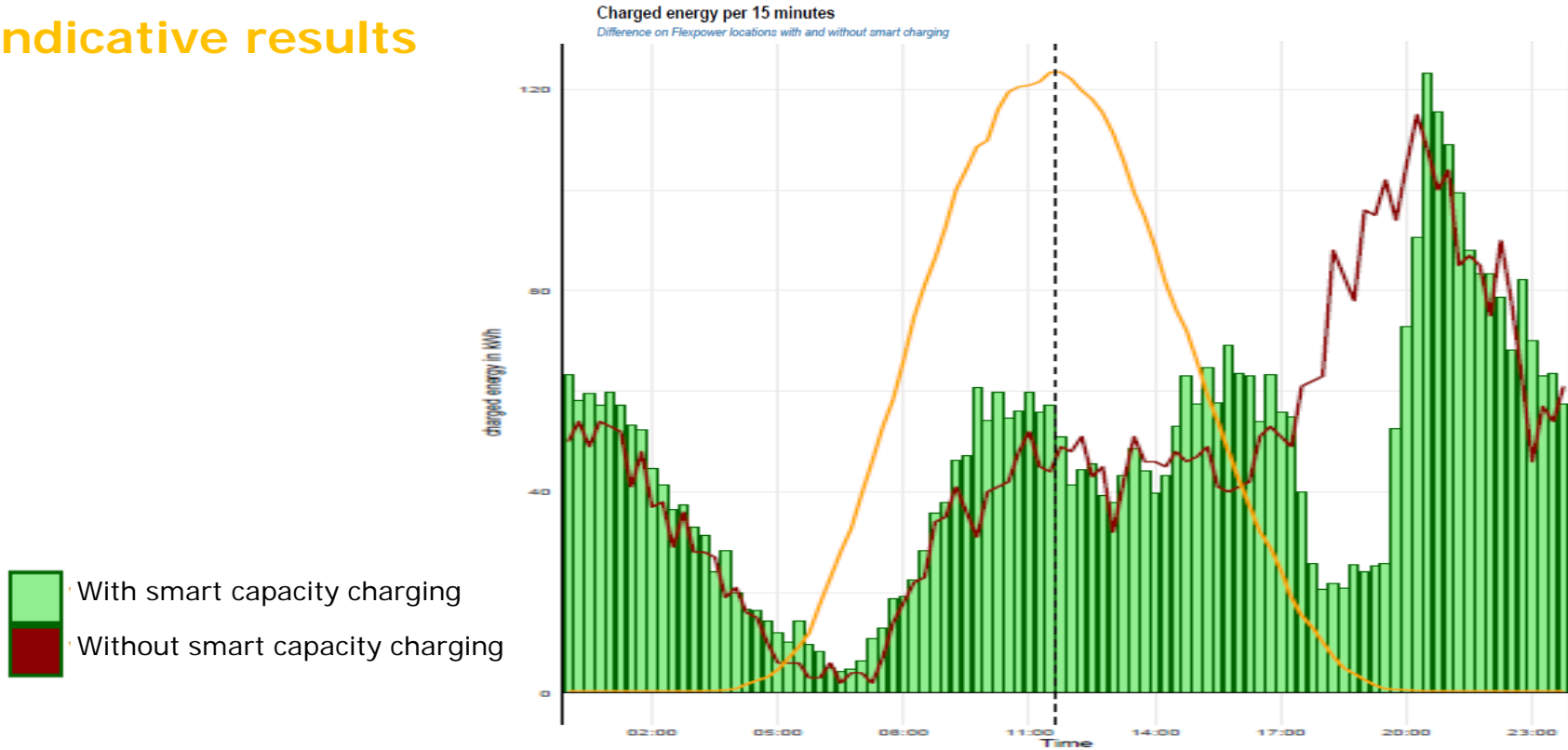


-  With smart capacity charging
-  Without smart capacity charging



# “Spontaneous” increase of charging on local renewable electricity

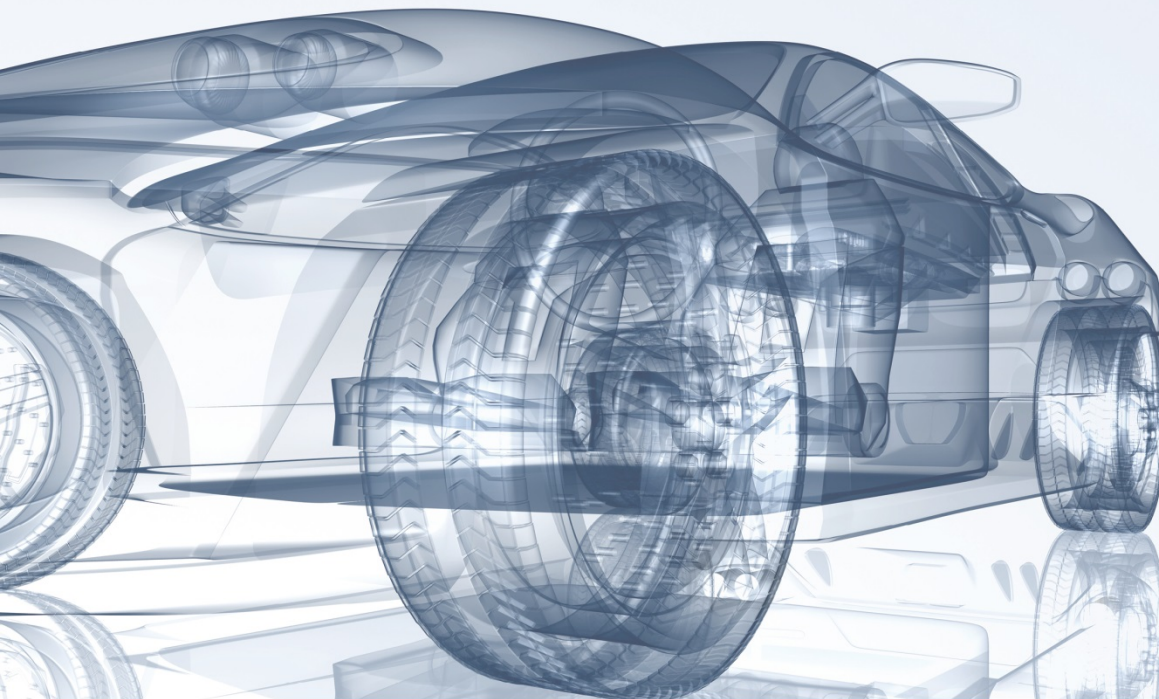
## Indicative results



- With smart capacity charging
- Without smart capacity charging

# Questions

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