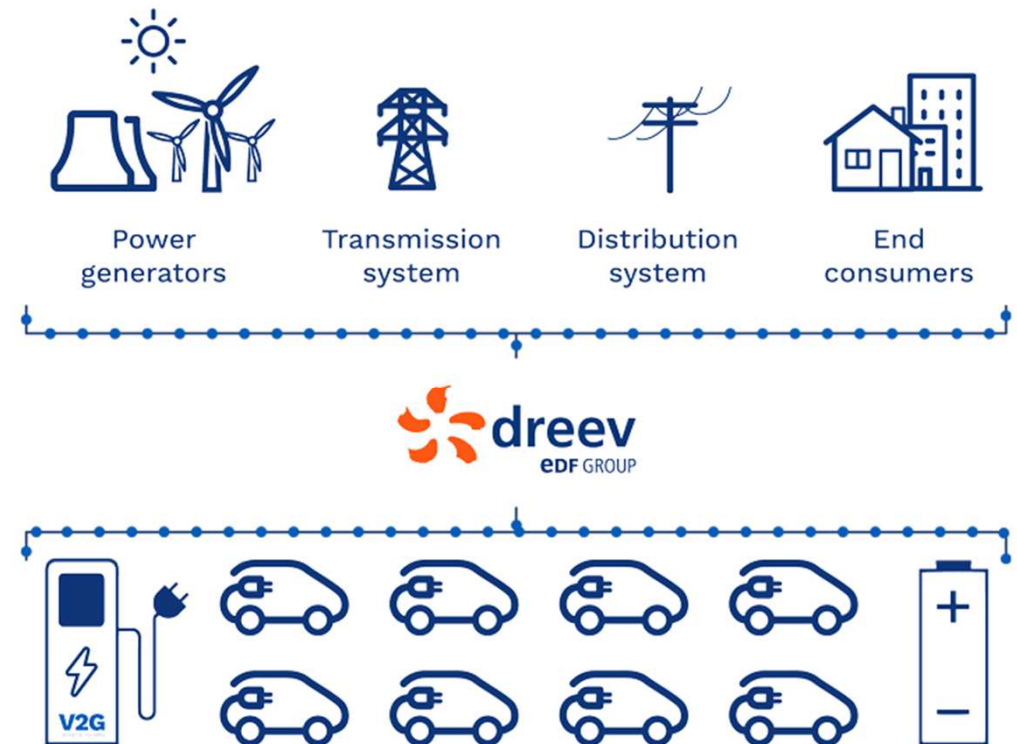# Smart charging and V2X: achievements, challenges

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Dreev is the specialist of V2G and smart-charging

- Dreev controls the charge and discharge (V2G) of Electric Vehicles

- By monetizing EV's storage potential on the energy markets, **Dreev helps reducing EV Total Cost of Ownership**

- While making sure that EV drivers mobility needs are always met

- Dreev solutions relies on Nuvve's patented technology, already deployed and validated on 5 continents

- Dreev is a joint-venture by ⚡EDF and NUVVE

Power generators

Transmission system

Distribution system

End consumers

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V2G

is the leader of commercial V2G in Europe

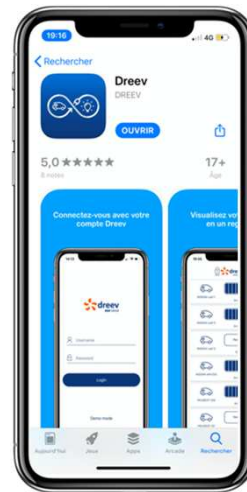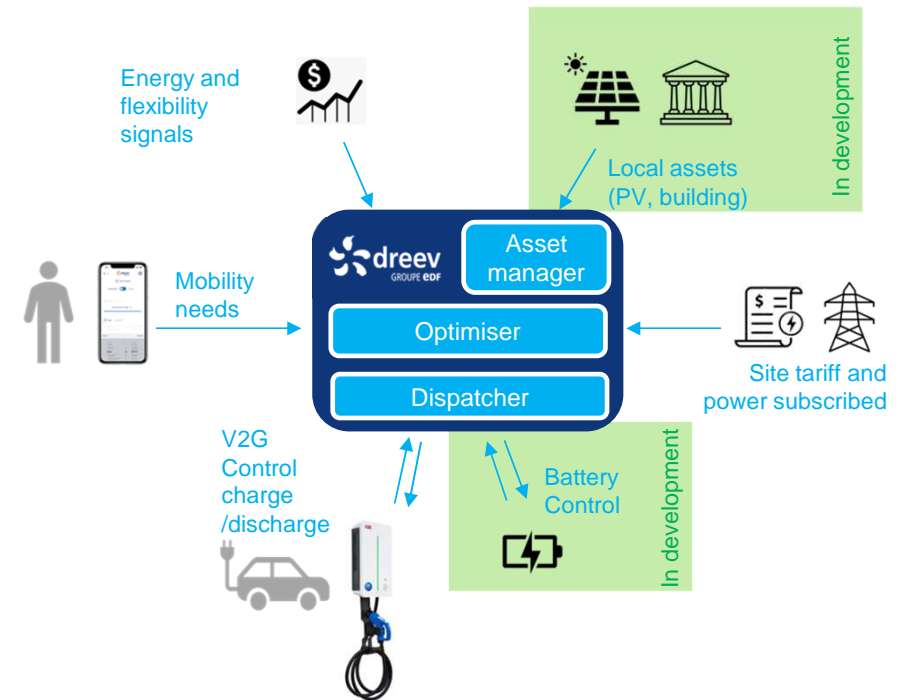DREEV deployed 20% of known world-wide V2G deployments in 2 years

DREEV's V2G technology

BEST-IN-CLASS V2G CHARGING STATION

USER MOBILE APPLICATION

ADVANCED & MODULAR V2G SERVICES

- ***Compact, powerful, simple***
- Produced by ABB, with DREEV technology inside (46 vendors consulted in RFI/RFQ/RFP)

- Services and charging station certified by NISSAN and PSA, **maintain battery warranty on your vehicles**
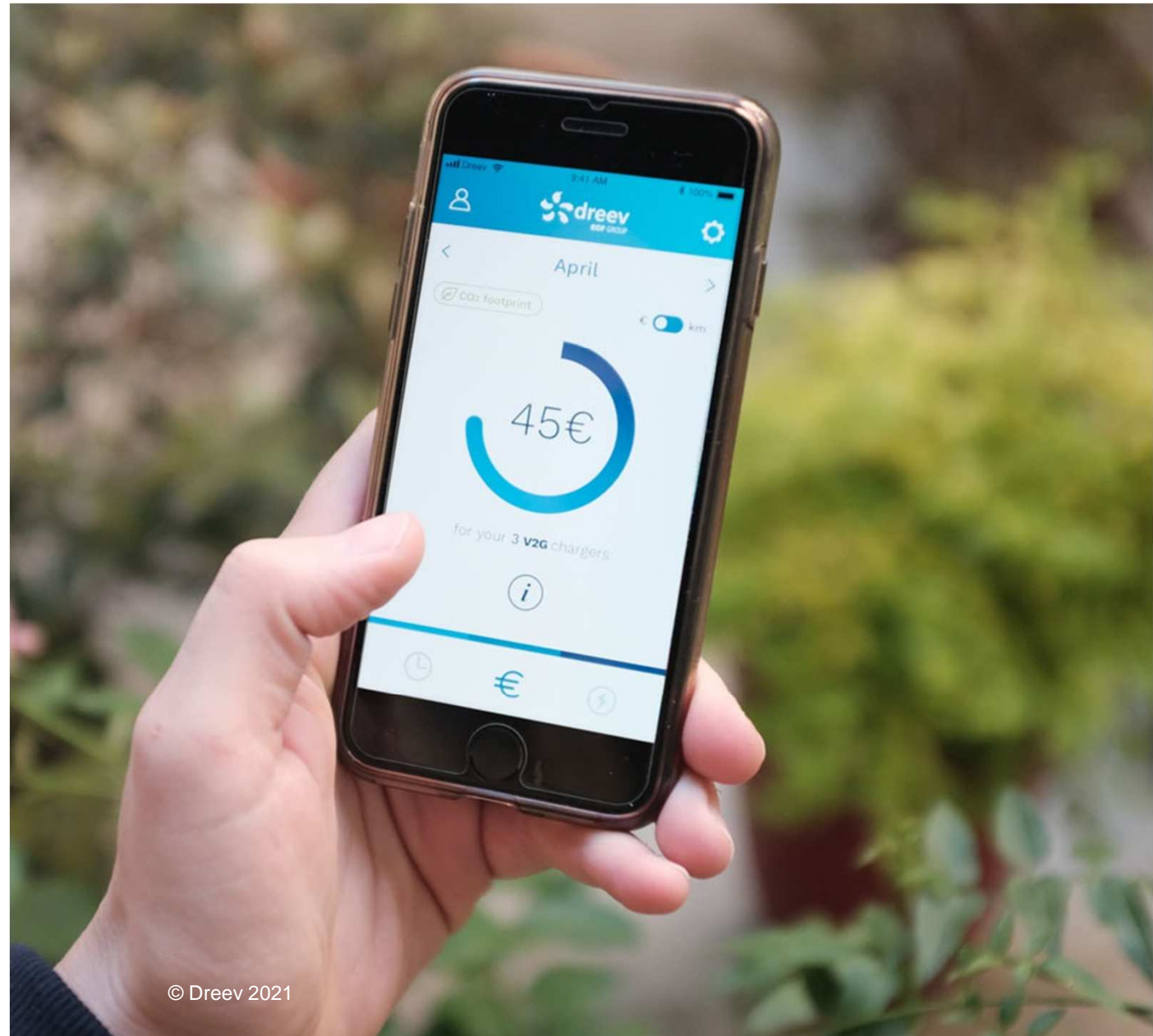
V2G benefits for our customers

Your EV batteries work for you:
you have to be rewarded for that!

Keep control of your charge
and plan your next trips at any moment
with our Dreev mobile application

An emergency?
Our **11 kW V2G charger** ensures a
quick and flexible charge

© Dreev 2021

Making it easy for customers to operate

Drive, plug in, we do the rest!

dreev eDF GROUP

1 Plug in your vehicle when parked

2 Schedule your next trip

3 Your vehicle is charged according to your preferences

4 Get a reward and reduce your TCO.

V2G charging station

- Product designed by ABB considering Dreev's requirements…

- …in order to meet the most recent and stringent TSO requirements (reaction time, accuracy, etc)
  - Regulation changes driven by the introduction of RES and the expected lack of synthetic inertia

- Main characteristics
  - 11kW DC (three phase), Chademo
  - Local grid frequency measures
  - Grid code compliant
  - Easy installation: plug and play, 25kg, wall or pedestal mounted

- Future versions expected to address a larger market share
  - Single phase
  - CCS

- First stations will be deployed on the field by November

Optimization problem
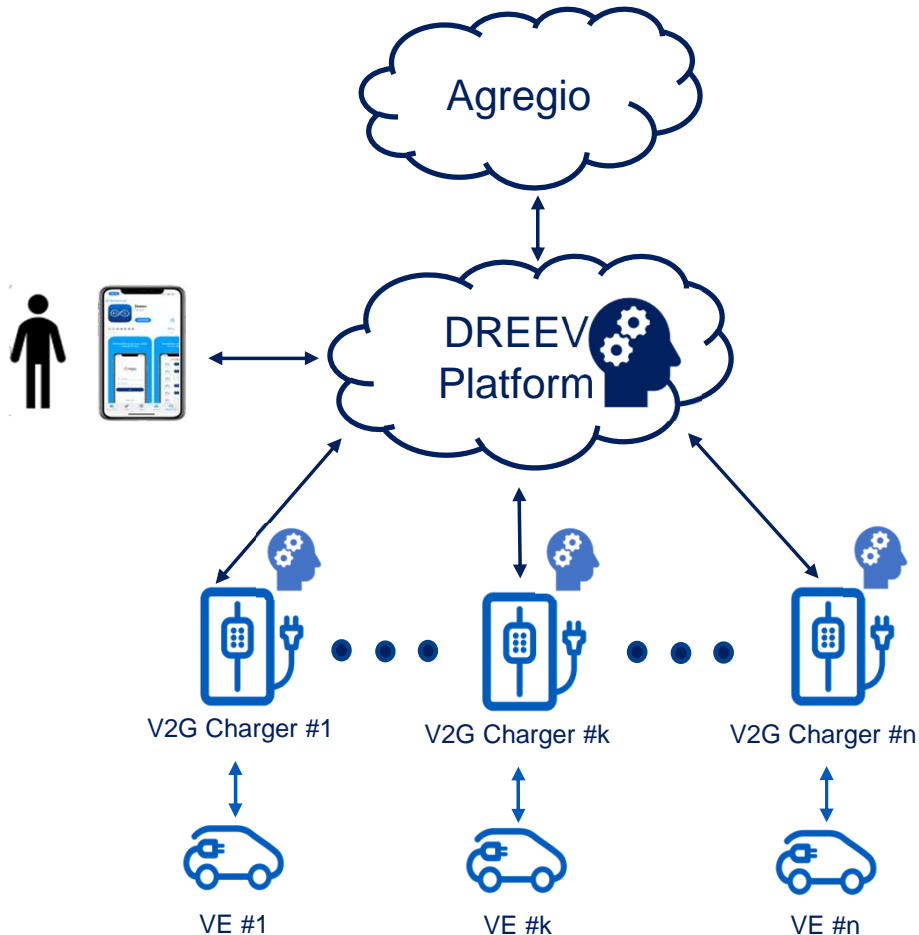
Dreev's optimization problem solver computes charger power setpoints in real time in order to…:
- **Respect the user SoC requirements (mobility needs)**
- **Provide the energy service at pool level as efficiently as possible**

…while considering several constraints such as:
- Real time condition of the V2G fleet
- EVs and charger technical characteristics (energy losses, maximum power, etc)
- Site power limitations
- TSO/DSO rules and requirements

DISPATCH GROUP FCR

explication et démonstration

Thank you

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