

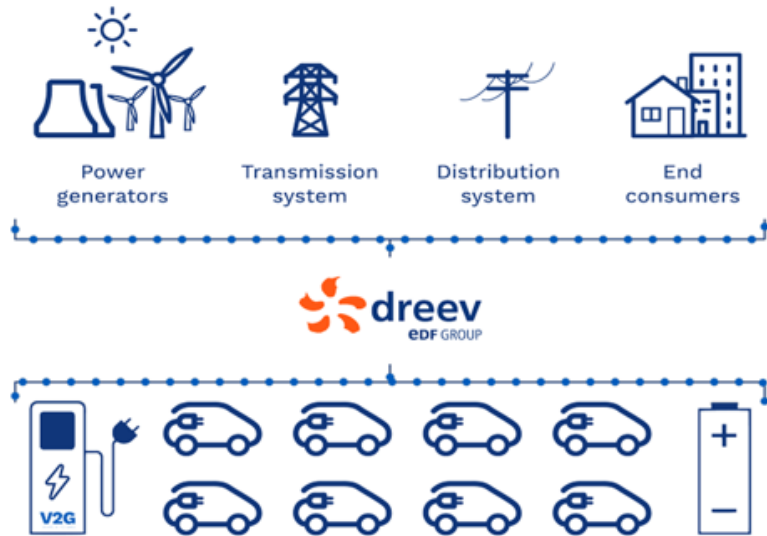


Presentation of DREEV's Vehicle-To-Grid activities

10/03/2022

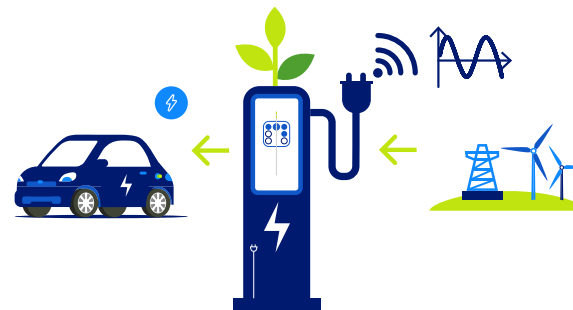


DREEV is a technical aggregator, making the link between e-mobility and power system

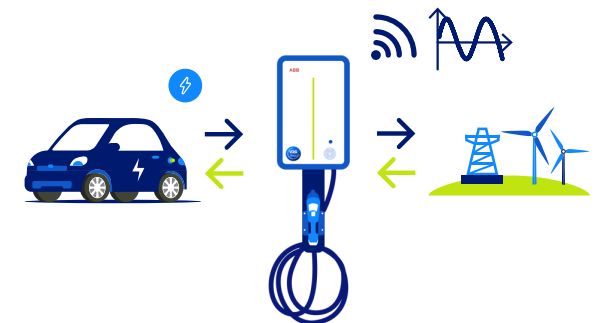


- DREEV is an EDF Group Company (joint venture with Nuvve) specialized in V1G and V2G solutions, with the objective to create a virtuous circle between e-mobility and the power system.
- 15 engineers from the energy optimization, automotive and IT/IoT worlds.
- We provide a technical solution (Cloud Optimization Software) in white label, in order to optimize the charge and discharge process of electric vehicles taking into account electricity markets, electricity tariffs, network constraints and grid codes, solar production, batteries, CO2 emissions, user and buildings constraints, real-time SOC, battery degradation, etc.

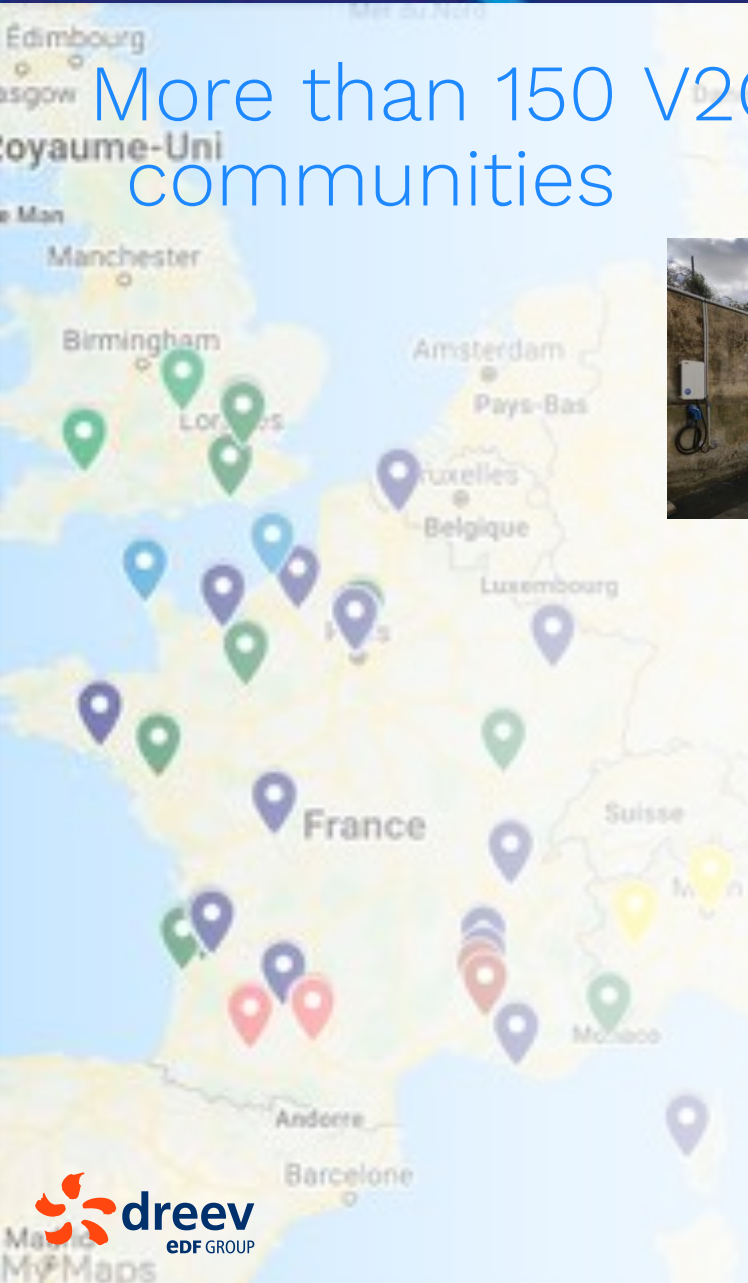
Smart charging (V1G)



Vehicle-To-Grid (V2G)



More than 150 V2G chargers installed for B2B fleets and communities



DREEV is a pioneer in V2G in France, with more than 150 bi-directional charging stations installed to date (several hundred more to come) to prove the technology and prepare for the market launch in 2023/2024.



A dedicated and optimized V2G architecture



The solution, based on V2G CHAdeMO series EVs from NISSAN, relies on 3 main components:

- A brand-new bidirectional DC charger developed by ABB in tight collaboration with DREEV,
- Our advanced EVs aggregation platform that controls the batteries' charging and discharging in real time,
- Our dedicated software application embedded in the V2G chargers to ensure the right performance of the FCR service, and to anticipate the integration of additional services to the power system.

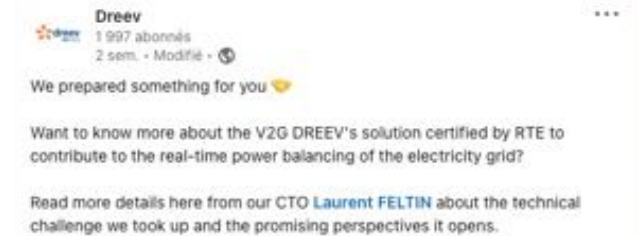
The developed solution is easily adaptable in CCS.



For the first time in France, DREEV's V2G solution has been certified by RTE to provide balancing services to the network



FOLLOW US ON LINKEDIN TO LEARN MORE ABOUT DREEV V2G CERTIFICATION AND TECHNICAL DETAILS

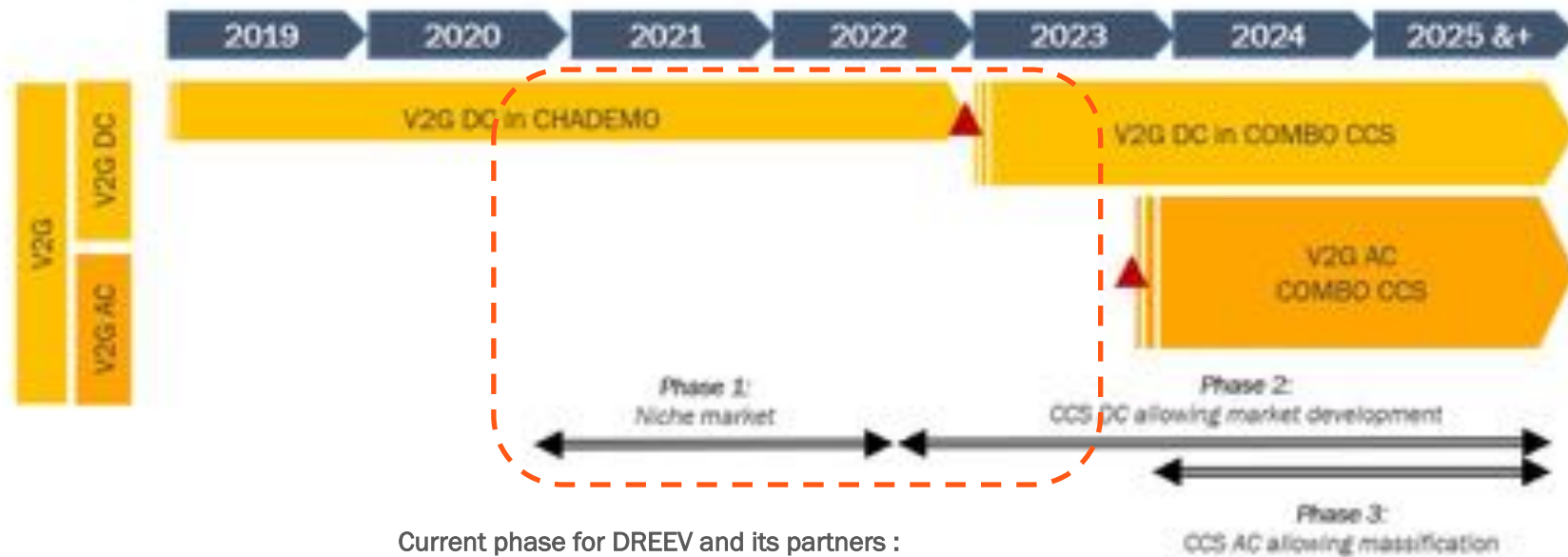


V2G Certification by RTE - Some technical details
Dreev sur LinkedIn · Lecture de 7 min
The certification by RTE of our distributed pool of V2G cars for providing FCR in France is...

Vehicle-to-Grid market preparation is now for the mass market to come in 2023/2024

European V2G technological roadmap

EDF/DREEV vision shared with major OEM



V2G overcost in DC charger. Important overcost compared to a domestic AC charger (ex : today 4000€ VS 1000€) which can be reduced by economy of scale.

V2G overcost in Onboard AC charger, limited (< 100€ for an OEM), with a nearly conventional AC charger.

Current phase for DREEV and its partners :

- Developing V2G chargers in CHAdeMO to launch the V2G market, being certified by the network operators and make the regulation evolve in the different European countries.
- Preparation of CCS V2G (active in standardization) for 2023/2024 market development, together with car/chargers manufacturers +

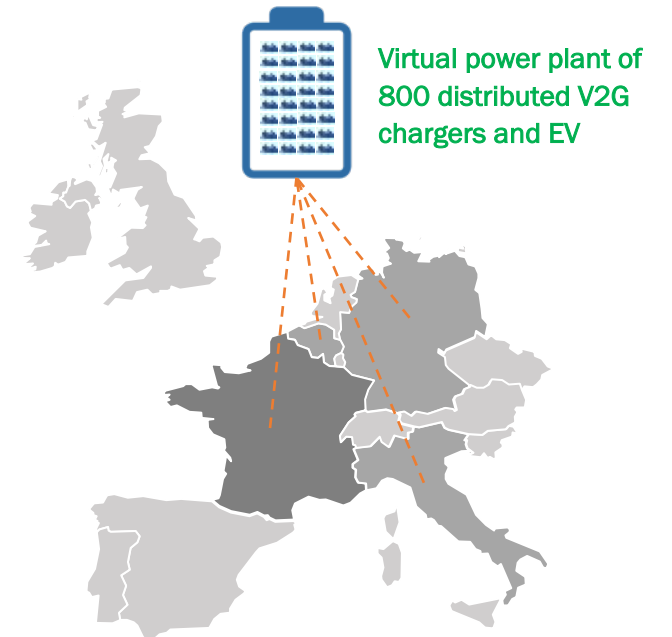
EDF and DREEV are developing the EVVE project, one of the largest distributed V2G project in Europe, supported by the European Commission



https://ec.europa.eu/clima/system/files/2022-01/policy_if_pf_2021_evve_en.pdf

- Virtual power plant of 800 V2G chargers installed for B2B customers, communities and EDF own fleet across in France and in Europe.
- Services stacking to generate financial revenues/savings and CO2 savings.
- Half of deployments in CHAdeMO, half in CCS, until end 2024. Then operation during chargers' lifetime.
- **Playground to learn with interested partners.**

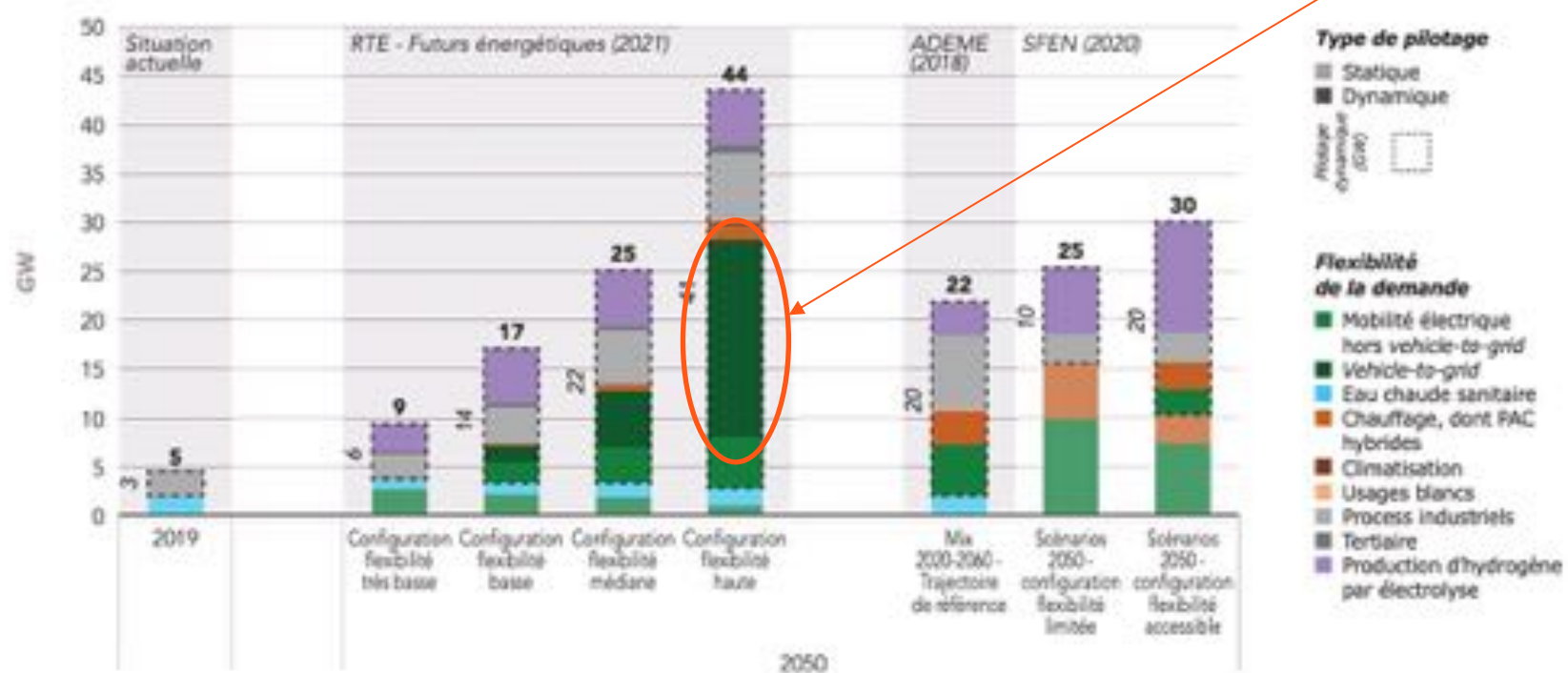
evve



TSO across Europe now see V2G as a major source of flexibility to reach net-zero power systems by 2050

Average demand-side response potential in France by 2050 (static and dynamic) in different scenarios
 RTE – Energy futures 2050 – January 2022

Up to 20 GW of V2G in RTE latest scenarios



Thank you
quentin.maitre@dreev.com

