



DEFA Group
"Manage aggregated flexibility"
September 2021



DEFA eMobility – at a glance

Charging points



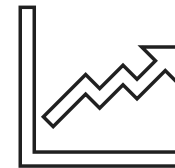
>140.000 installed

Charge Point Operator



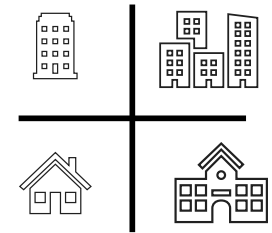
>35.000 connected
charge points

Aggregated flexibility



>200 MW

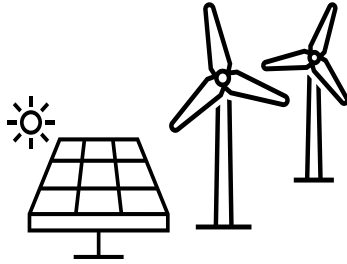
All segments



B2C, B2B and B2G

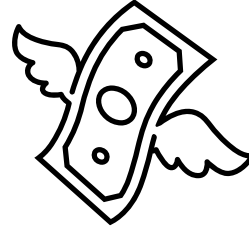


How major trends effect our end-customers and operators (CPOs)



Major trends...

- EV adoption
- Energy mix and renewables
- Unpredictability (generation)
- International market
- Increased energy (end electricity) consumption
- Decentral energy generation
- More prosumers



Major challenges...

- Increasing electricity prices
- Grid instability and congestion
- New regulations and effect tariffs
- End-user complexity



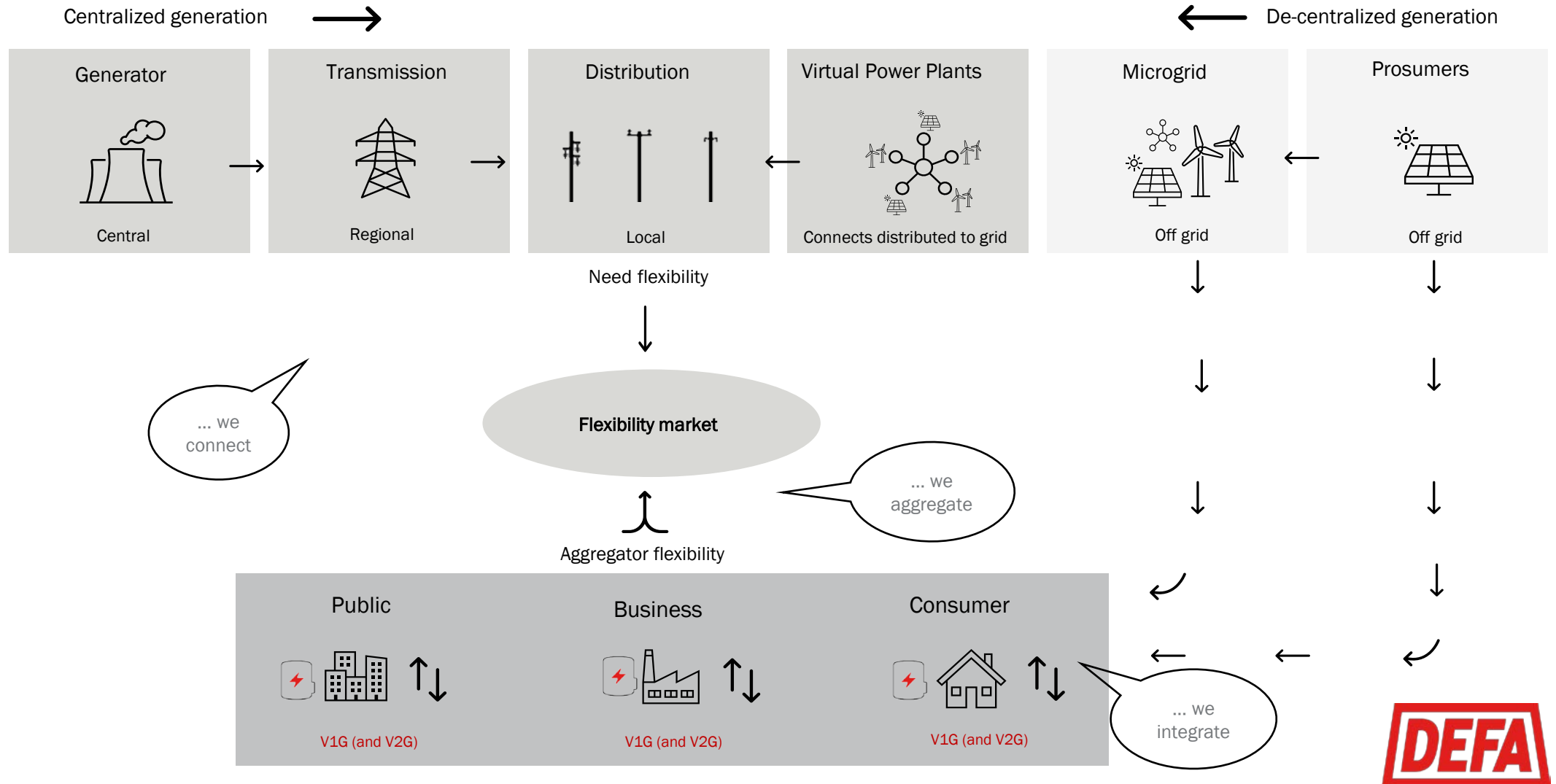
Our customer commitment...

- Ease of use
- Keep control, stay independent
- Save money
- Be green
- Low cost of ownership
- Make money (B2B)

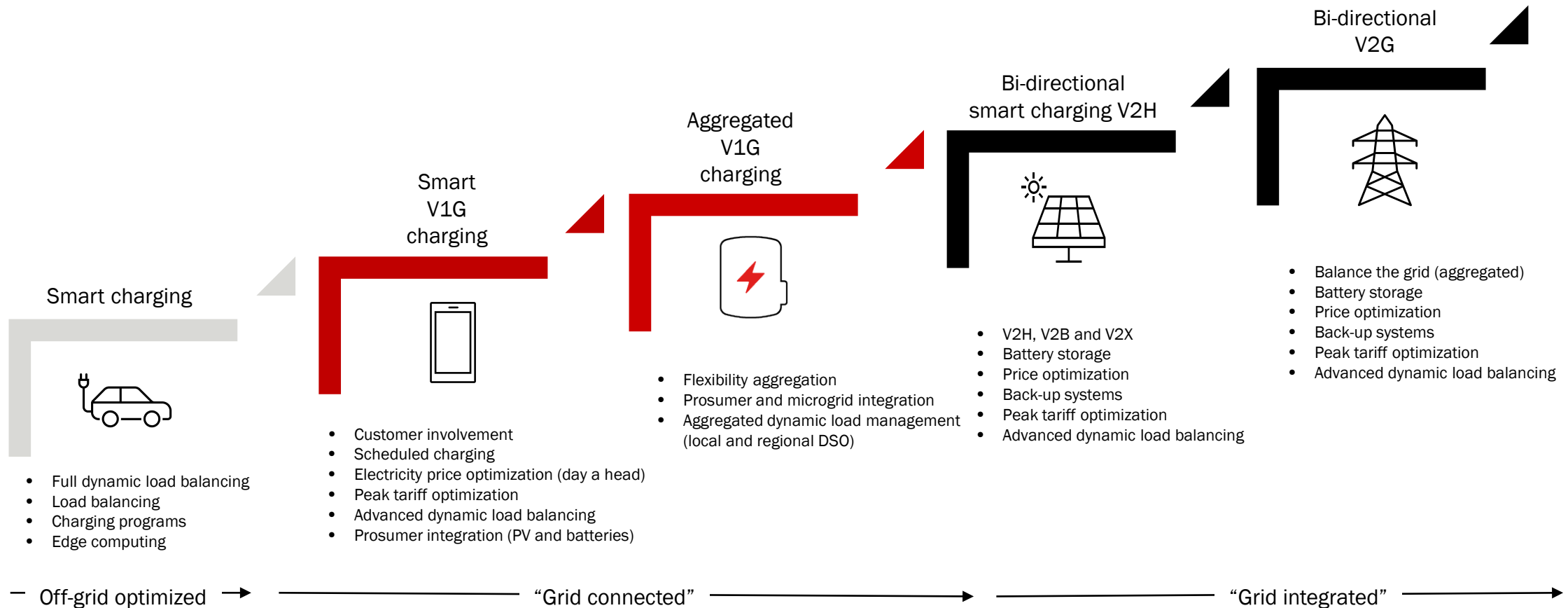


DEFA's position in the future electricity ecosystem

Smart charging provider, integrator and aggregator



How we deliver smart charging and contribute to the ecosystem...



Pilot project with DNV proves that we are technically ready...

V1G – Smart charging and frequency response and flexibility

Pilot project at DNV's charging facility at Høvik, Norway. Goal is to prove that we can aggregate existing (and new) charging facilities and provide frequency reserve services. The project will also deliver research papers on advanced power quality analysis on how a charging facility can impact local power quality

Fast frequency response

Site: DNV at Høvik, Norway

Partner: DNV

Chargers: 100 DEFA eRange Uno (2015)

CPMS: CloudCharge

High-resolution power quality analysis : DNV

TrueEnergy: Flexibility (market signals)



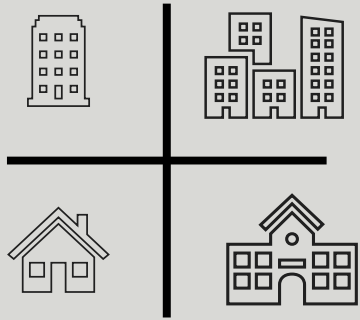
International R&D project with DNV with participants from Norway, Sweden, UK, Denmark and Germany



Key is to motivate owners of charging infrastructure to share flexibility...

Our customers own flexibility → Technically, we can share it... → What's in it for our customers?

The CloudCharge community is owned and shared by our customers – they own their flexibility and must benefit from the new market opportunities...



>200 MW

- 35.000 charge points (connectors)
- Strong growth (Nordics and Europe)
- OCPP 1.5, 1.6 and 2.0 – we can connect and aggregate all types and all ages – AC and DC
- We can offer frequency response and connect to various flexibility providers
- Connect directly to independent flexibility market platforms (e.g., NODES)



Source: DEFA CloudCharge

How to understand the benefits and risk?

How to make it economically attractive?

How can our customers stay independent, if they want to?

How to make it easy and convenient?

