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# ENERGY DATA SHARING

## THE CASE OF ELECTRIC VEHICLE (EV) SMART CHARGING

*ISSUE PAPER PRESENTATION*

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# RESEARCH PROJECT OBJECTIVES

1. Identify business cases and guiding principles for European energy data space
2. Concrete use case: smart charging
3. Formulate policy recommendations

## ***Main questions to be addressed:***

- What property rights are included within the smart charging data?
- What is the business case for industry players and customers to share their data?
- What should be the overarching principles governing a European energy data space?
- What government interventions or data standards are required to make specific use cases successful for achieving green transition goals?



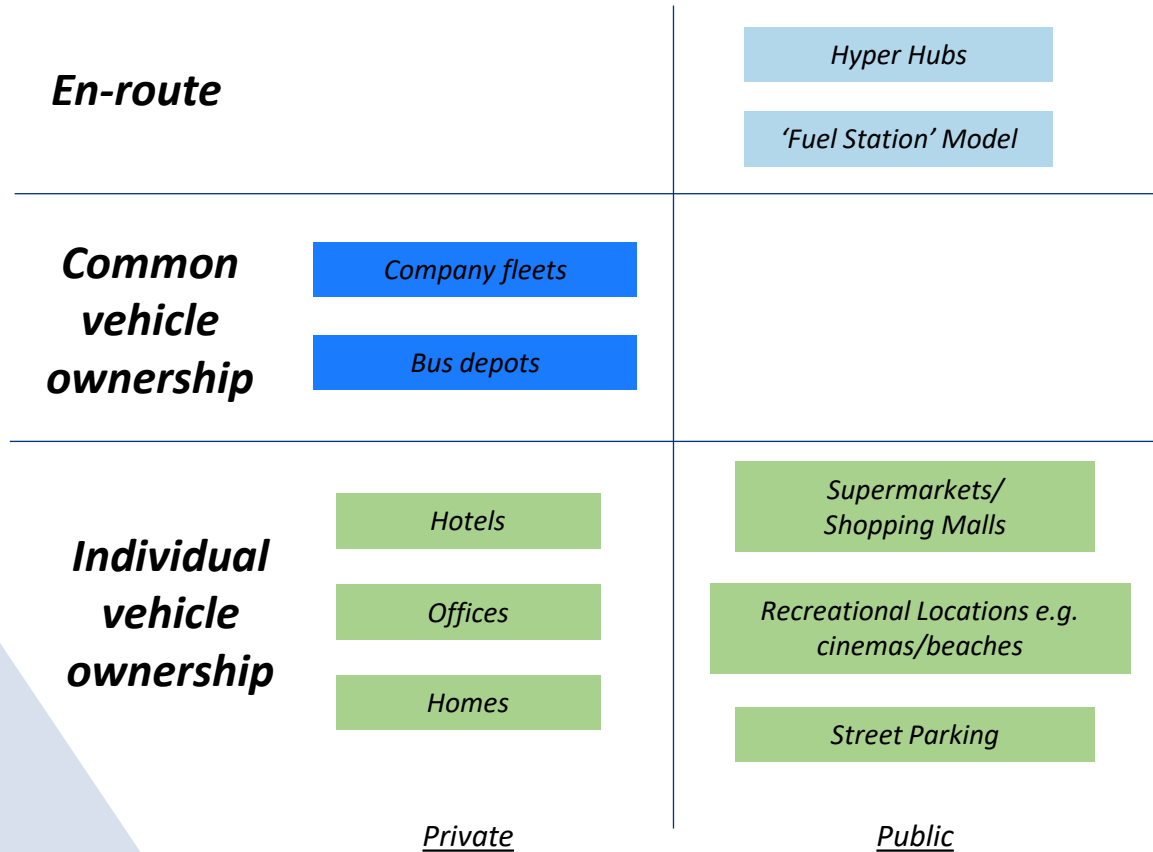
## CONTEXT

- Until now, **smart meters** have not always lived up to their promise
- European Commission (EC) “**Action Plan on Digitalisation of Energy**” aims to:
  1. Develop European data-sharing infrastructure and energy data space
  2. Empower European citizens with tools for participating in energy markets
  3. Driving general uptake of digital tech in energy
  4. Improving cybersecurity of the sector
  5. Support development/uptake of climate-neutral solutions for ICT
- How can the EC implement its action plan in **one specific use case**?



# TYPES OF ELECTRIC VEHICLE CHARGING SOLUTIONS

Source: Adapted from ENTSO-E (2021)



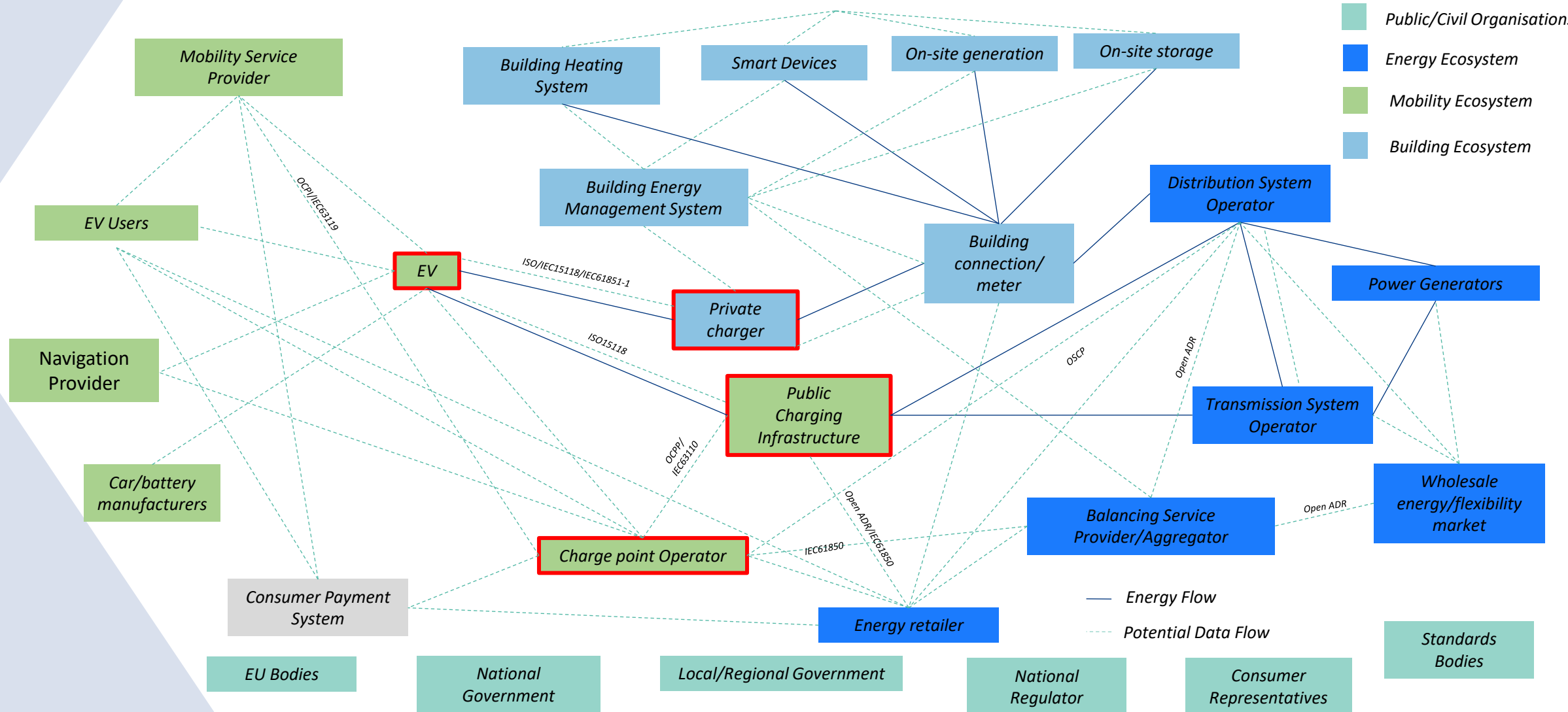
Different charging technologies:

1. **Non-smart charging** – ‘plug and play’ speed and timing of charging not controlled by an external control system
2. **Unidirectional smart charging** – speed or timing of charging is controlled by an external control system or responds to market signals
3. **Bi-directional smart charging** – EV battery can supply electricity to the grid (V2G) or to the home/other devices based on external control/market signals

Slow charging
  Fast charging
  Highly predictable charging



# THE ELECTRIC VEHICLE CHARGING ECOSYSTEM AND DATA FLOWS





# EV SMART CHARGING / DATA SHARING

Relevant EU legislation/regulation/directives on the **energy** front:

- EU Data Governance Act + Data Act
- Network and Information Security (NIS2) Directive
- Electricity Directive
- “Fit for 55” package:
  - Renewable Energy Directive (REDII)
  - Energy Performance of Buildings Directive (EPBD)
  - Alternative Fuels Infrastructure Regulation (AFIR)



# SMART CHARGING DATA NEEDS

- Unidirectional vs. bidirectional
- Infrastructure upgrades
- Variety of potential sellers and buyer
- Optimum charging cycles and integration and battery life
- Interoperability needs
- Criteria for successful rollout:
  1. Cross format reading/charging
  2. When costs are lower than price, energy sources have an incentive to supply
  3. Profitable storage is incentivised
  4. Sufficient return on battery investment, considering also the transport needs of car-based batteries



# EU DATA SHARING REGIMES

- Several **legislative initiatives**, different **approaches and scopes** (horizontal v. sector-specific; mandatory v. voluntary data sharing; general data rights v. asymmetric data access rights)
- Common feature: **Application Programming Interfaces (APIs)** as a key enabler
- Limits of data portability and progressive shift towards interoperability: the emergence of ***in situ* access right** (PSD2, Data Act, EHDS)
- **Energy-specific data sharing initiatives**: electricity transmission system operation, smart metering, renewables, energy performance of buildings





# REGULATORY CHALLENGES

- **APIs, standardisation, and interoperability**
  - Awareness of the key role played by interoperability and standardisation (DMA, Data Act, EHDS)
  - No support for mandating the adoption of technical standards or interfaces
  - The case of Open Banking (UK CMA: a blueprint to maximise the benefits of smart charging)
- **Privacy and cybersecurity**
  - Particularly relevant for the energy sector (Electricity Regulation, Electricity Directive, Action Plan)



## NEXT STEPS

- Further review of **technological constraints** on smart charging incentives
- Detailed review of **comparable experiences**
- **Policy recommendations** to support a broad, rapid rollout of EV smart charging data sharing while maintaining appropriate incentives for investment and system integration

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