

Smart charging

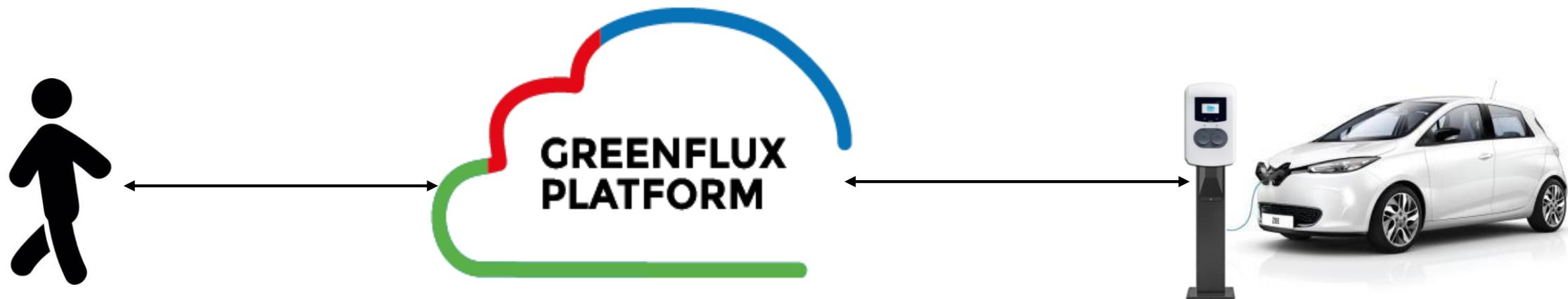
About the business model behind charging in a smart way



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Copenhagen, Exploitation workshop, 2019



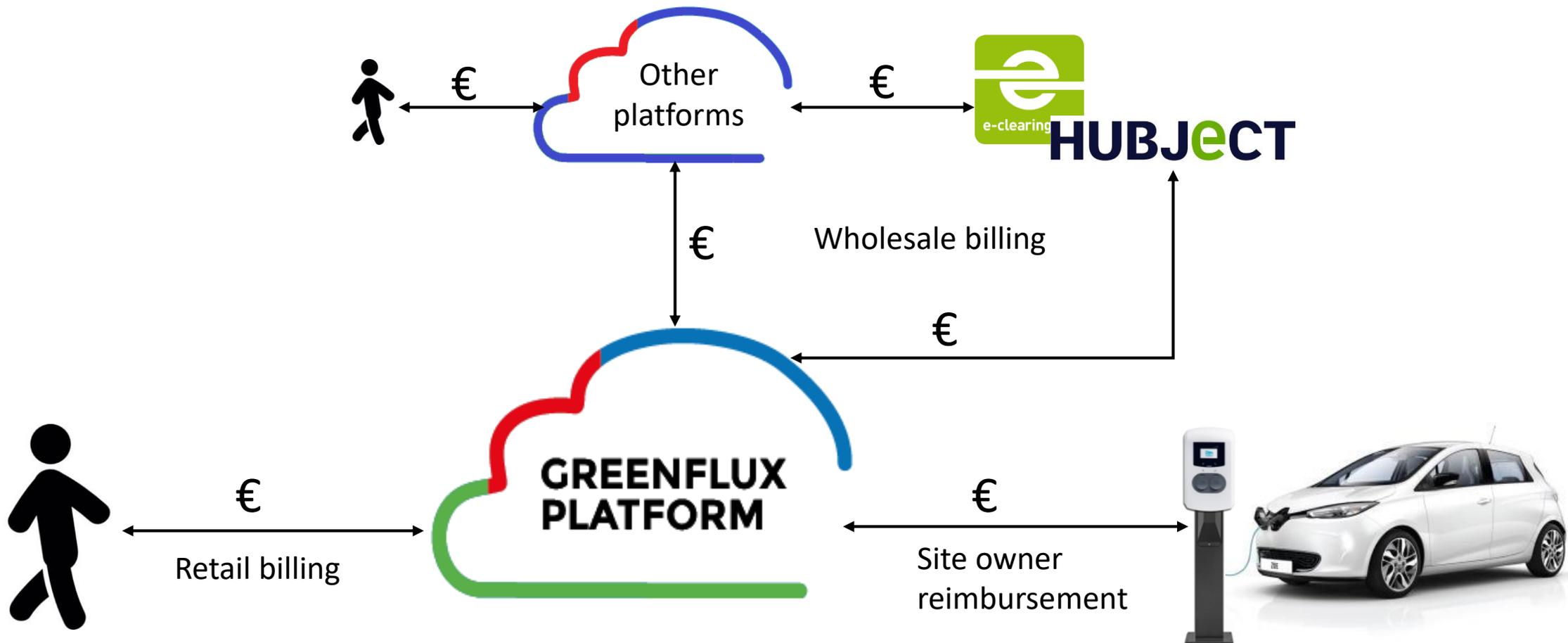


GREENFLUX PLATFORM

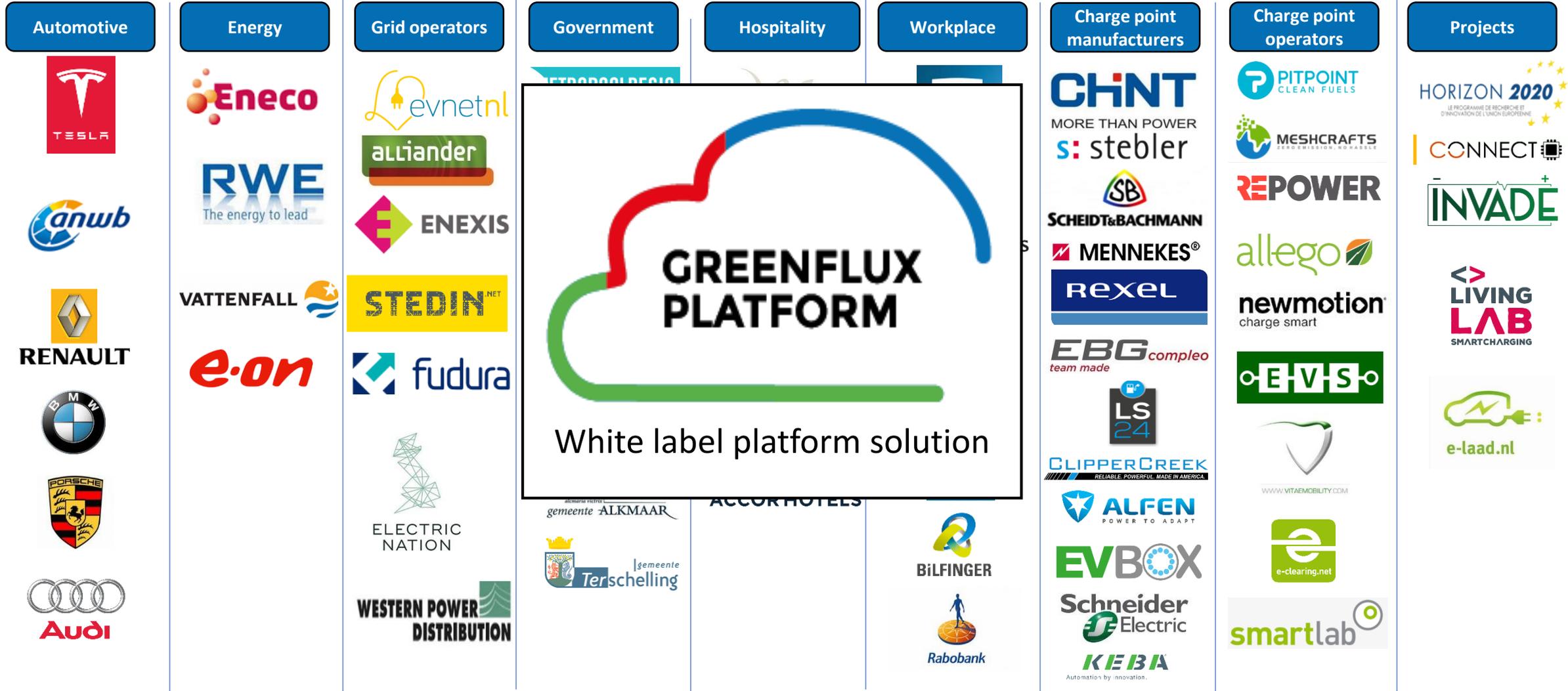


Operational management
Remote support
Smart charging

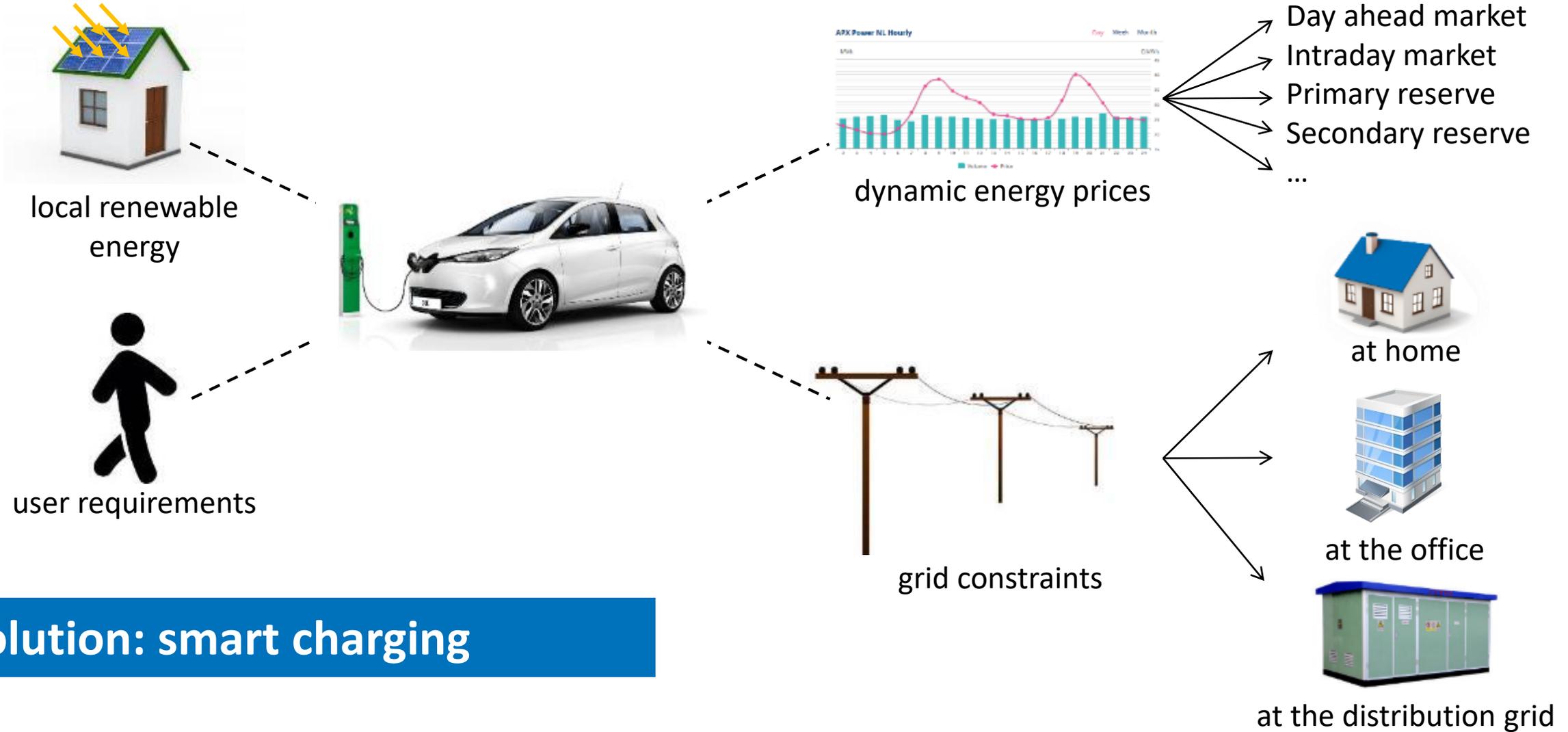




Platform as a service



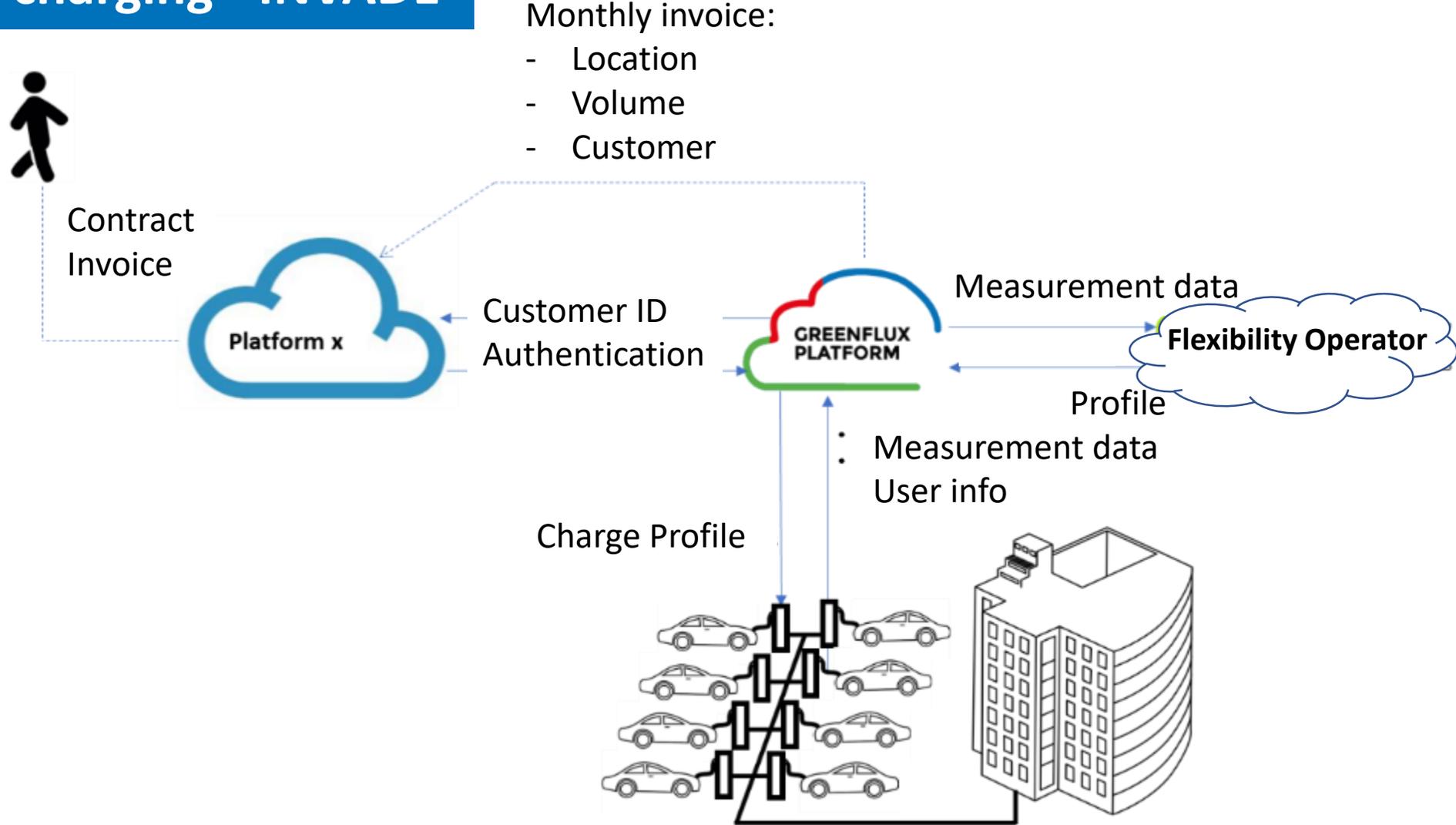
Combining the challenges



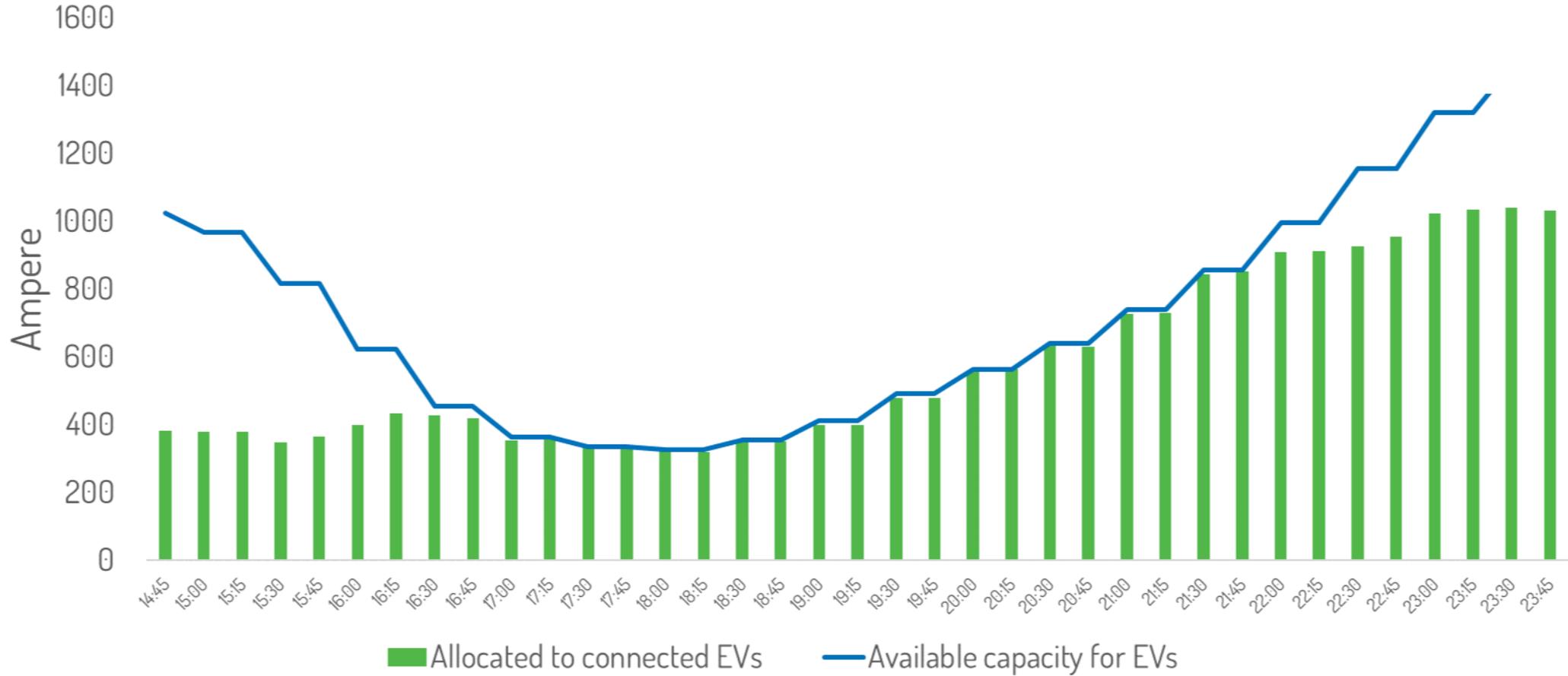
Solution: smart charging



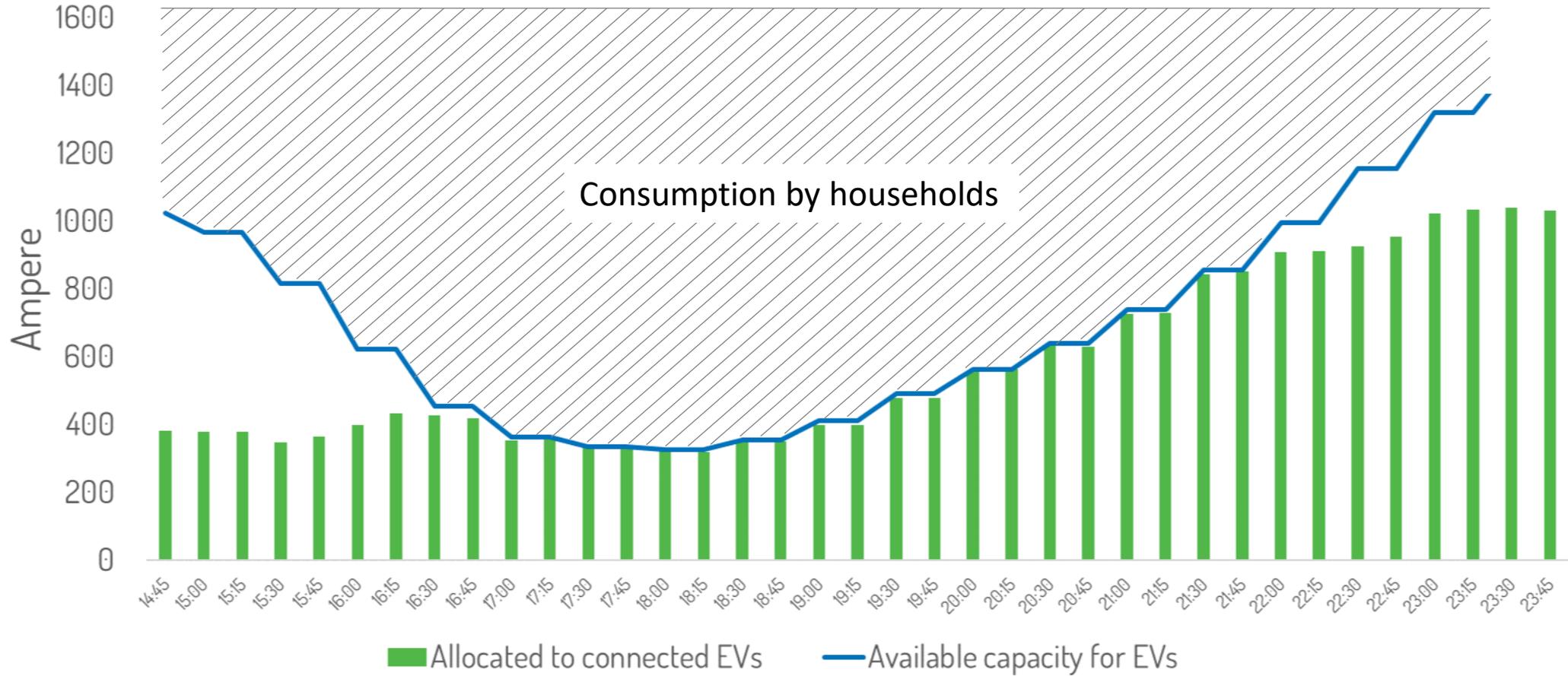
Smart charging - INVADE

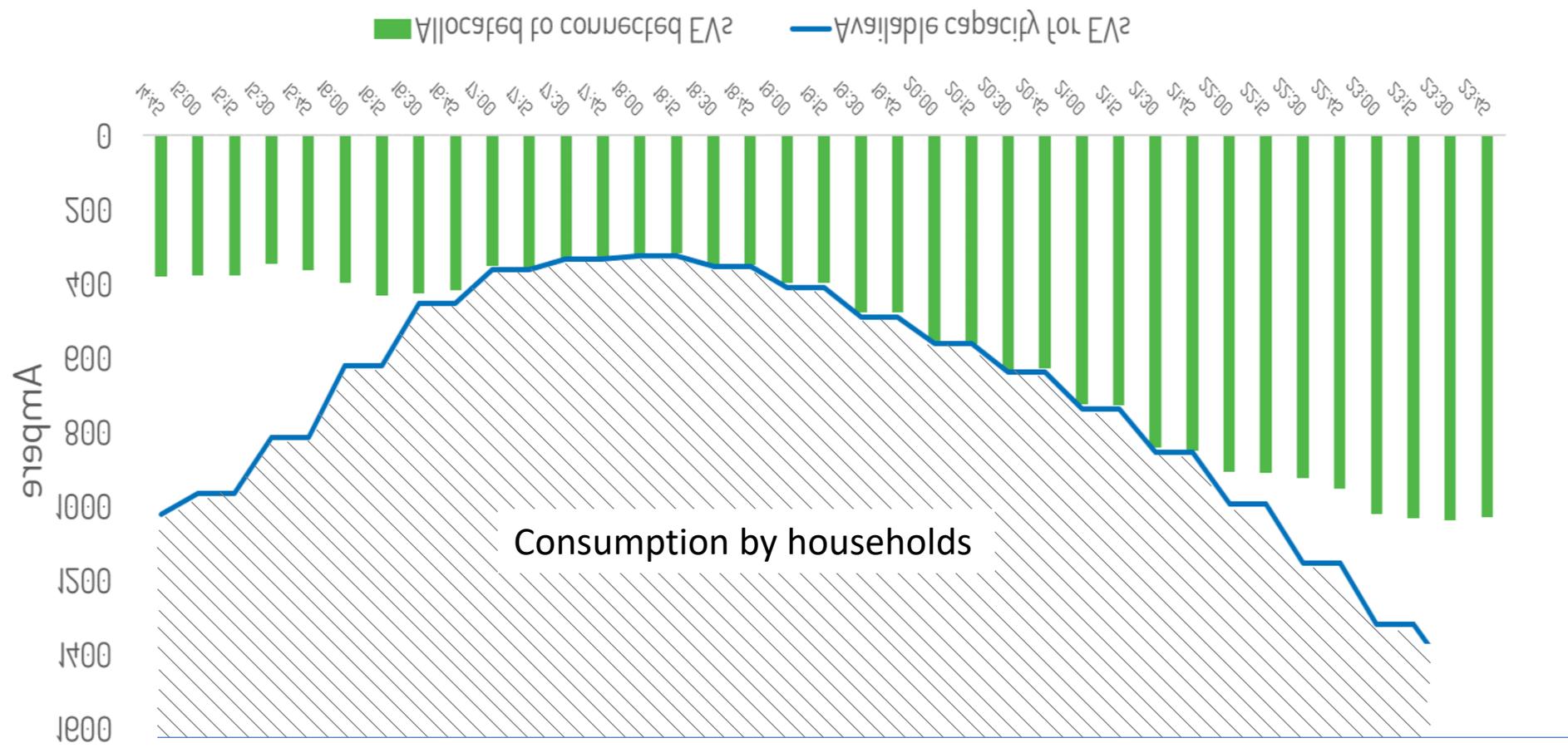


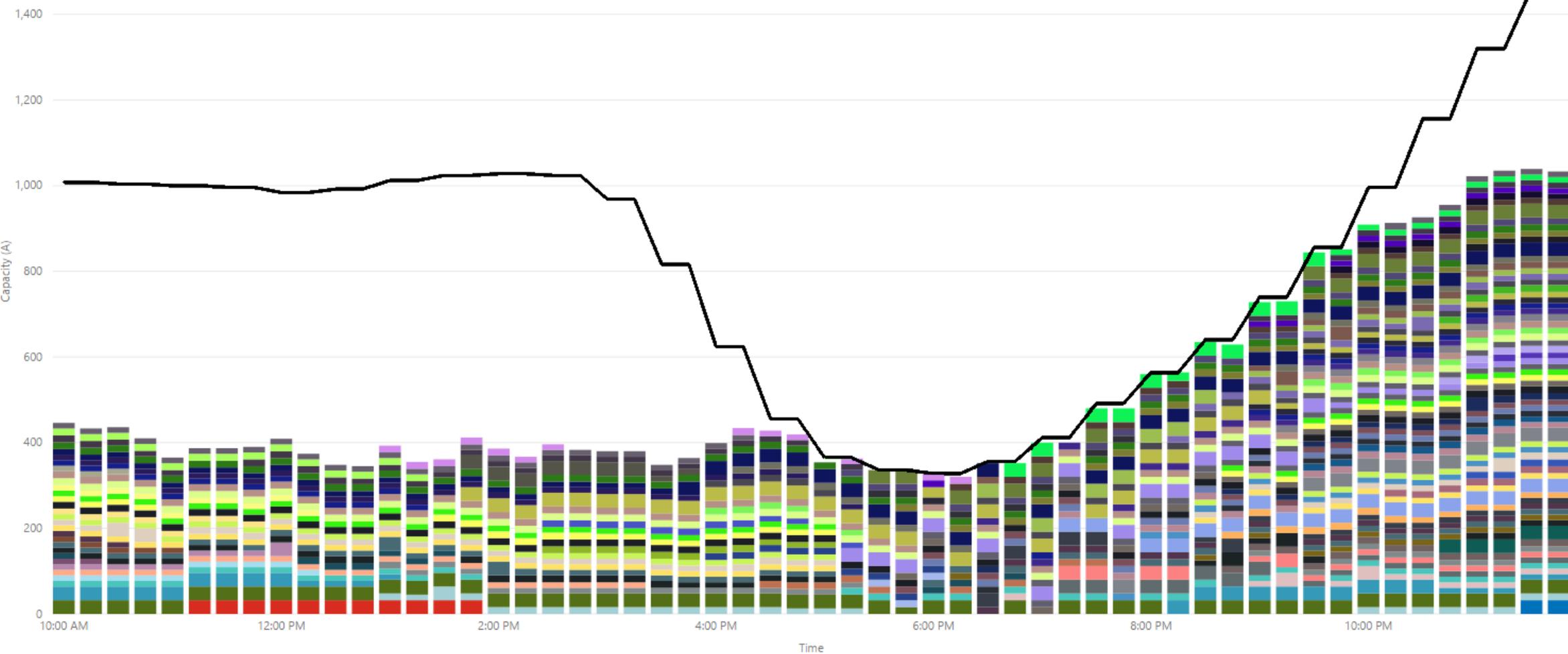
Load management

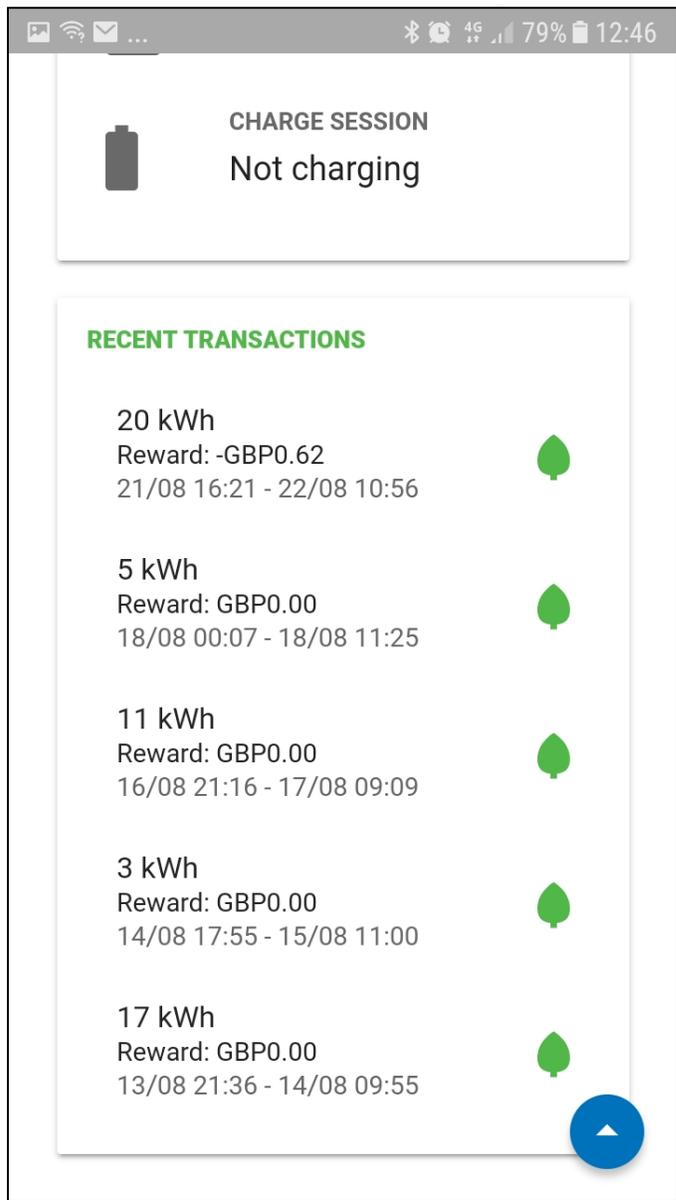
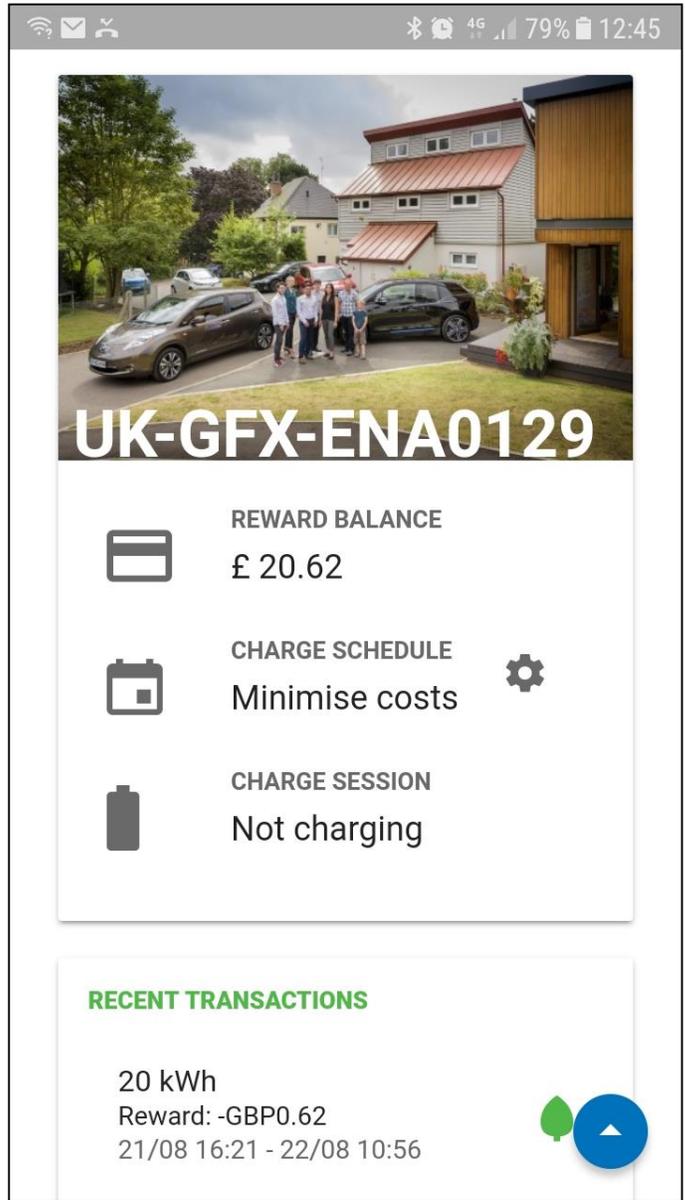
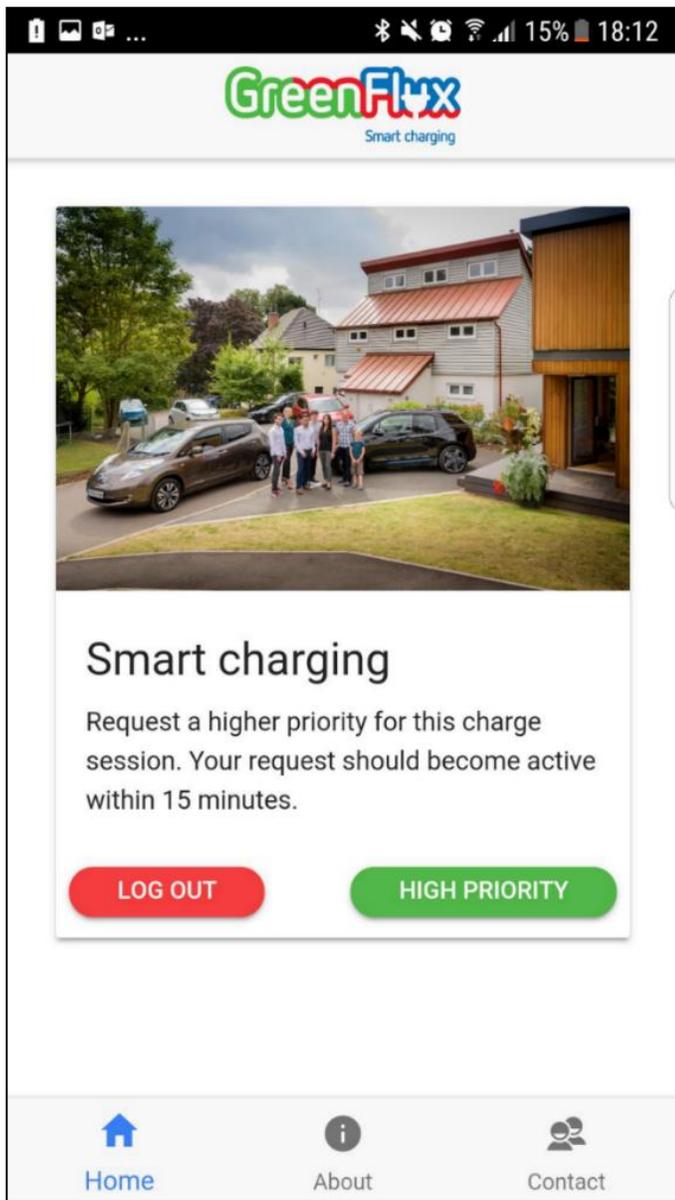


Load management









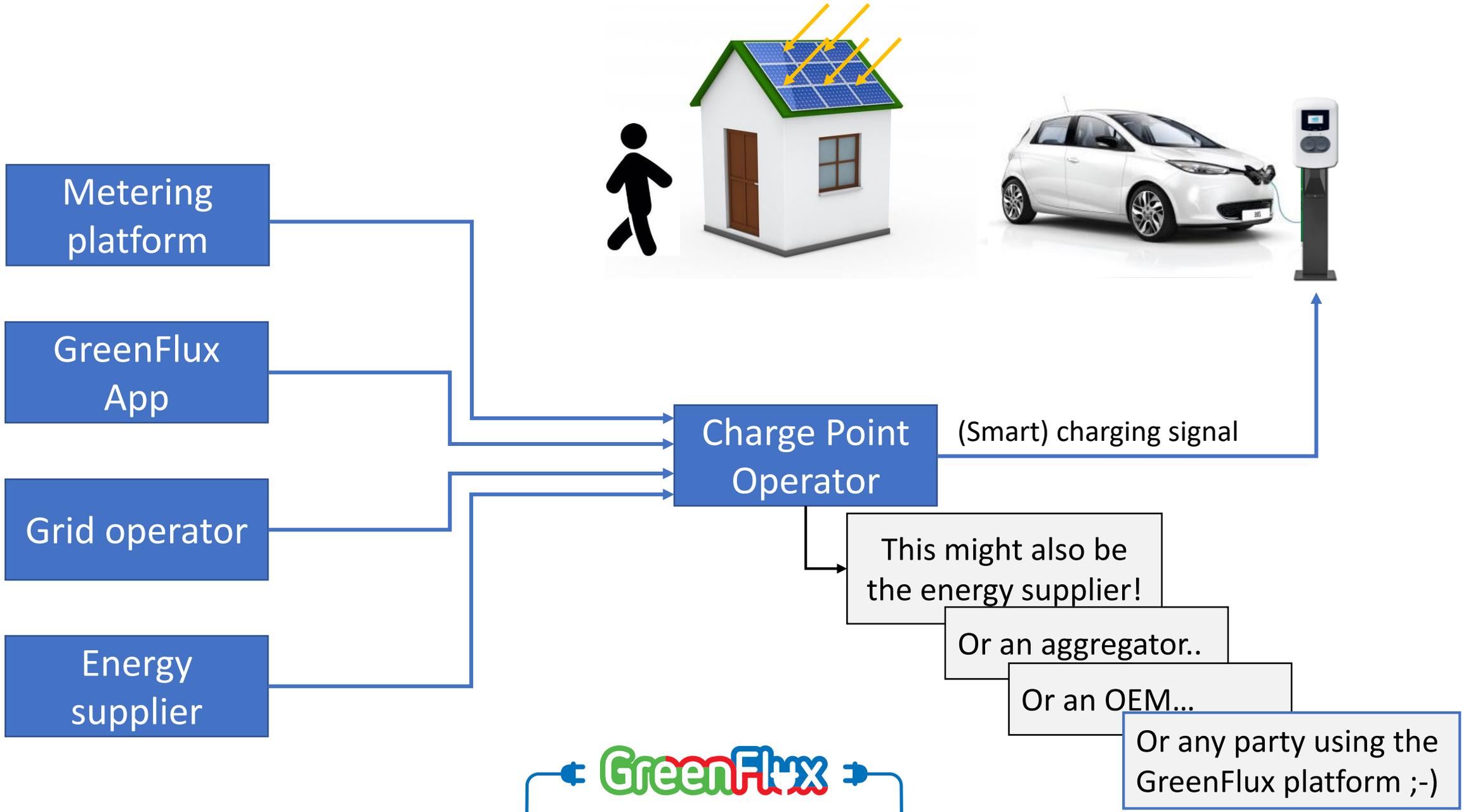
Where is the money??

- Very good business case inside buildings
- No business case at households & public chargers due to legislation



Enexis head office
Smart charging
saved ~€200.000

We can do this *today!*



Contact information

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Charging a fleet of EV's using the INVADE mobility cloud

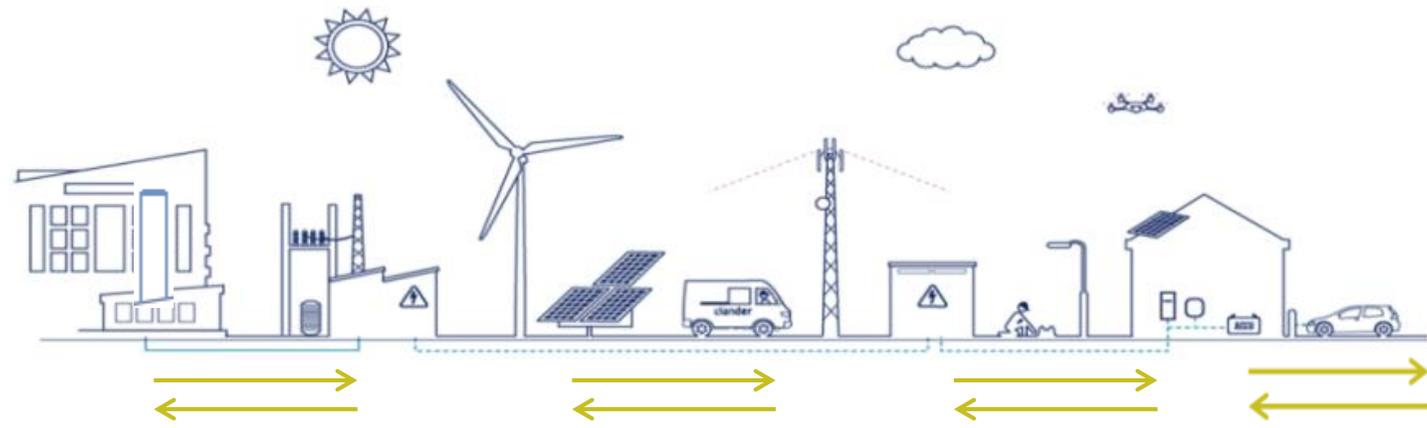
Dr ir Marisca Zweistra

The energy landscape is now a twodirectional system

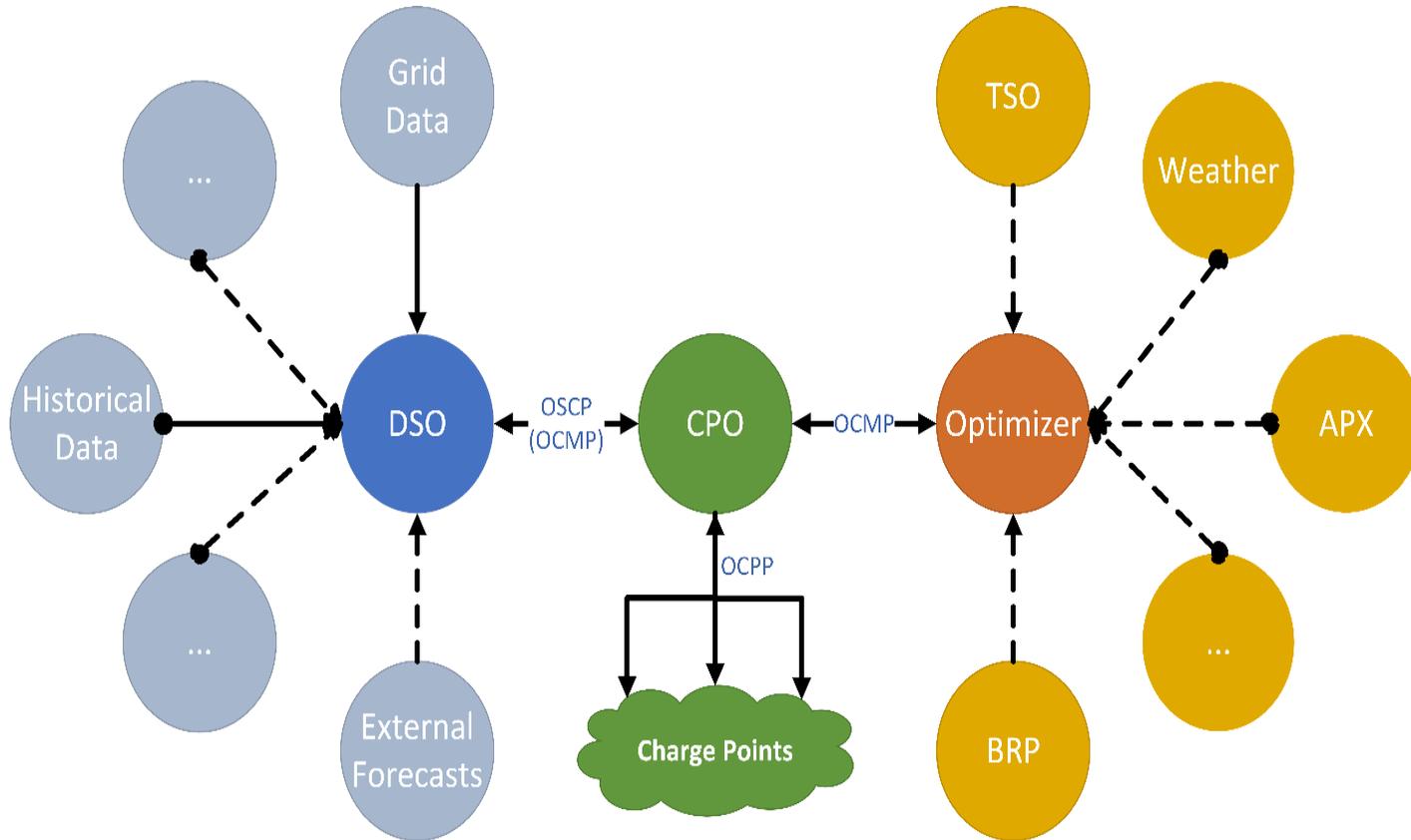
From



To

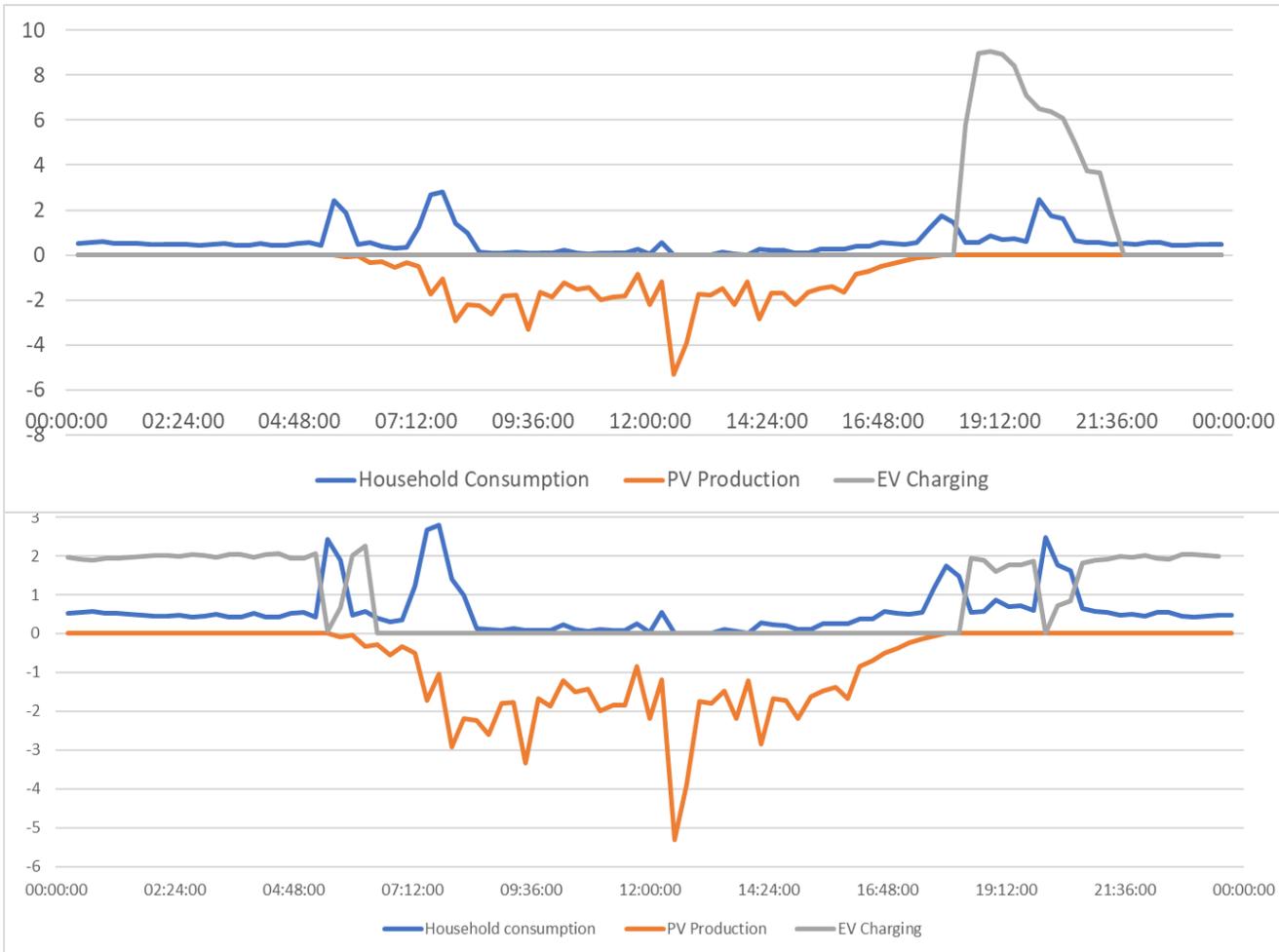


INVADE: Calculating and executing the profile through developed software



1. DSO: Prediction of Electricity Grid Usage - on District level (System approach)
2. Optimizer: INVADE platform Energy management - on District level (System approach)
3. CPO: Controlling Charge Transactions – on Grid Connection level
4. Integration Exchange of information between roles via standard protocol OCMP

EV charging based on optimal profile

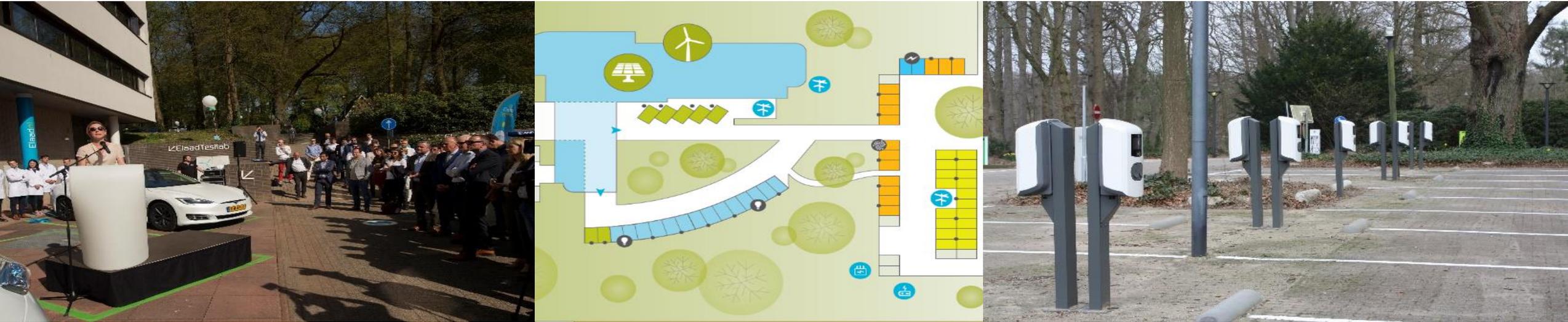


Uncontrolled situation

Researching:

- Smart charging, including V2G
- Power Quality
- Interoperability

The INVADE Domain 2 use case: Office building

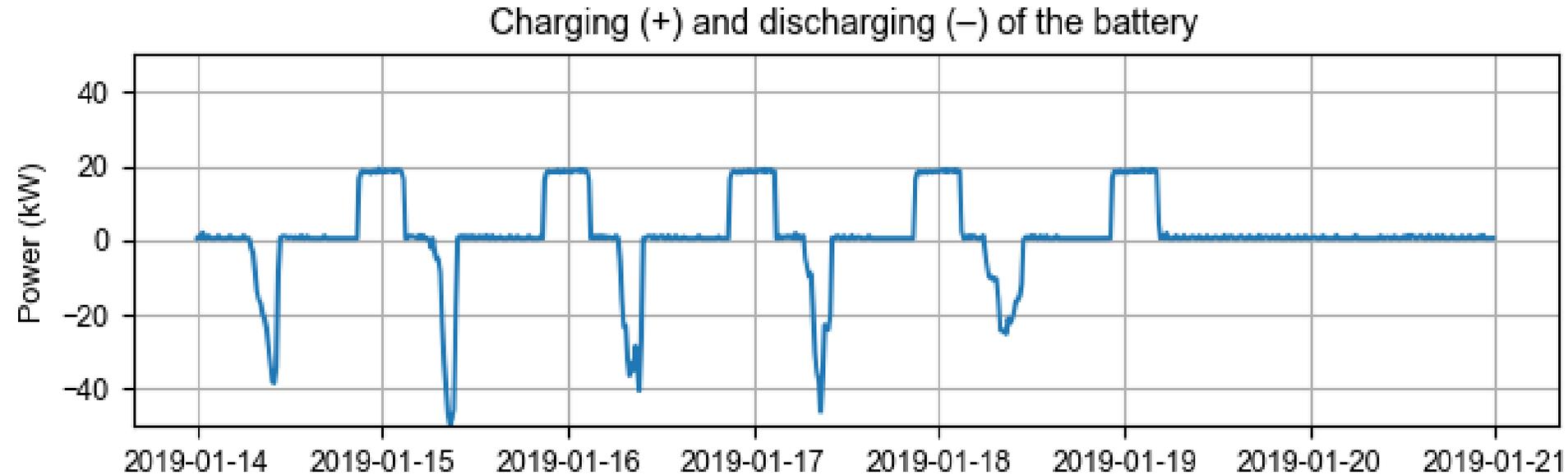


As part of the Invade project, the ELaadNL test site is equipped with a stationary battery and meters so that unique tests and research can be carried out.

A V2G car is present at the site and charging behaviour is continuously collected.

Our V2G charger arrived march 2nd but unfortunately is not yet safe to use due to failed dust testing

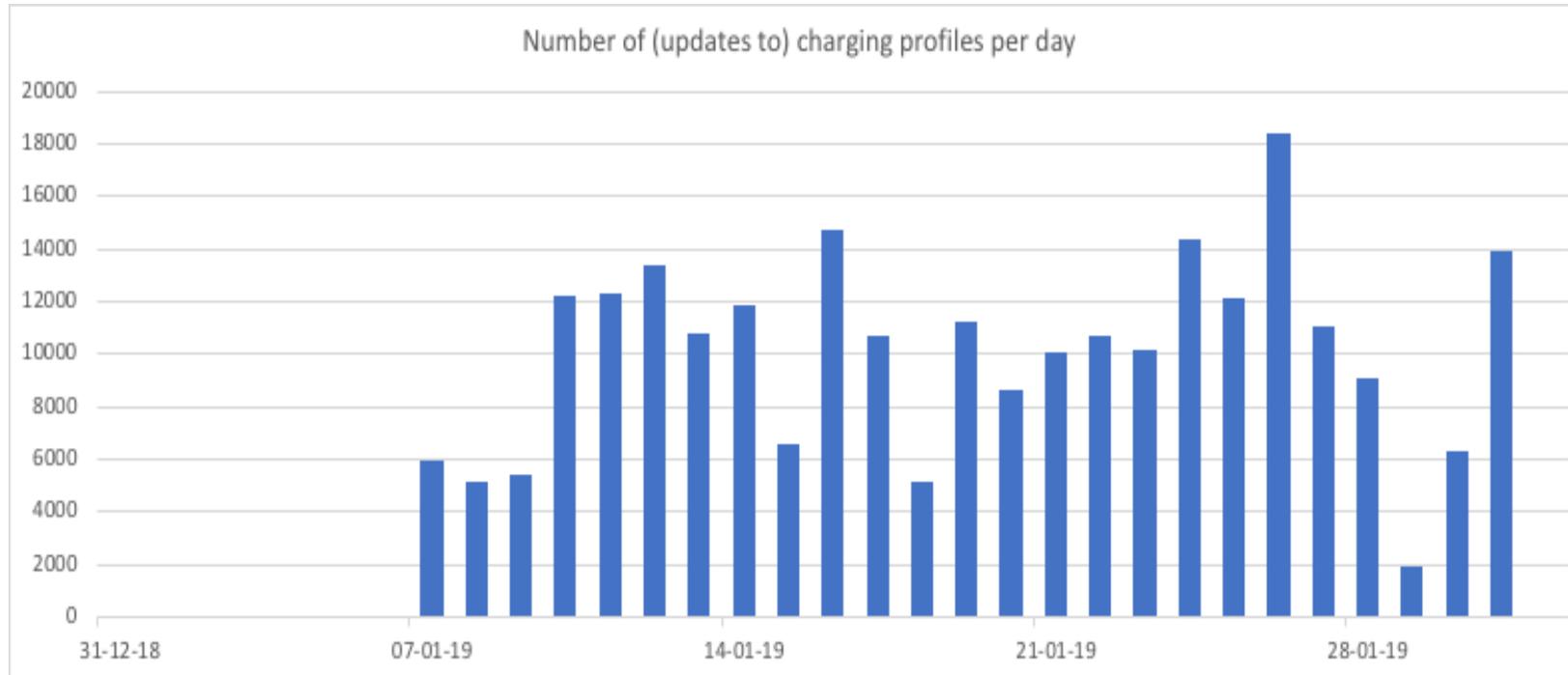
The INVADE Domain 2 use case: Office building



The battery on site is currently charged at night and discharges in the morning to aid the charging of the arriving EV's.

It's capacity is sufficient to alleviate the biggest peak of charging the EV's but not enough to fill in all charging.

The INVADE Domain 3 use case: some data



We currently have, on average, between 600 and 800 charging sessions per day. These charging sessions have an average of 10 modifications to their session due to the INVADE intervention