The Eco2charge project
Smart energy management for EV charging systems

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WORLD EFFICIENCY SOLUTIONS

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Shared innovation

ADEME
Agence de l'Environnement et de la Maîtrise de l'Energie

INVESTISSEMENTS D'AVENIR

Short, middle and long run issues related to electric vehicle deployment

❑ Basic charging network 3-7 kW

Enables every day charging while EV are parked (home, work, downtown):
On average 45km/charge (10kWh).
3-7 kW charging points are sufficient to answer this need.

❑ Fast charging network

To complete the basic charging network:
- When basic charging points are not existing: old city centres, collective housing
- When parking time is limited: car sharing, multiple trips
- To ensure long trips

❑ Buildings

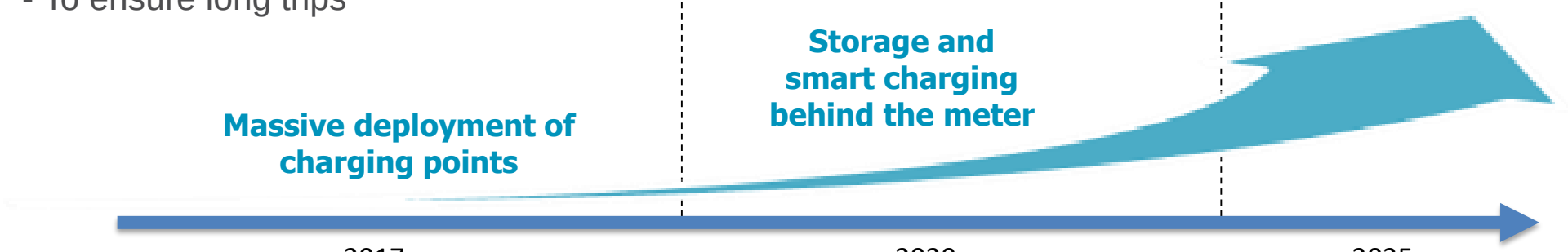
Smart charging associated with storage for load levelling in order to avoid renovating the building electrical infrastructure.

❑ Fast charging stations

Storage for load levelling in order to avoid renovating the site electrical infrastructure.

❑ Power grid

Storage for load levelling in order to avoid or differ renovating the electrical infrastructure.



Services to support this deployment

- Charger w/o civil work **City Charge**

http://www.dailymotion.com/video/x553rrj

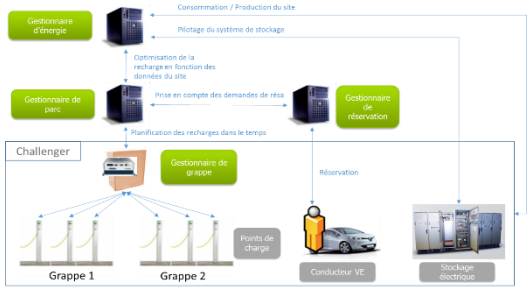
- Supervision **Alizé**

https://www.youtube.com/watch?v=kLZ78acXRMA

Massive deployment of charging points

- Smart charging with 2nde life battery storage **eco2charge**

https://www.youtube.com/watch?v=ClKZ03xkohA



Storage and smart charging behind the meter

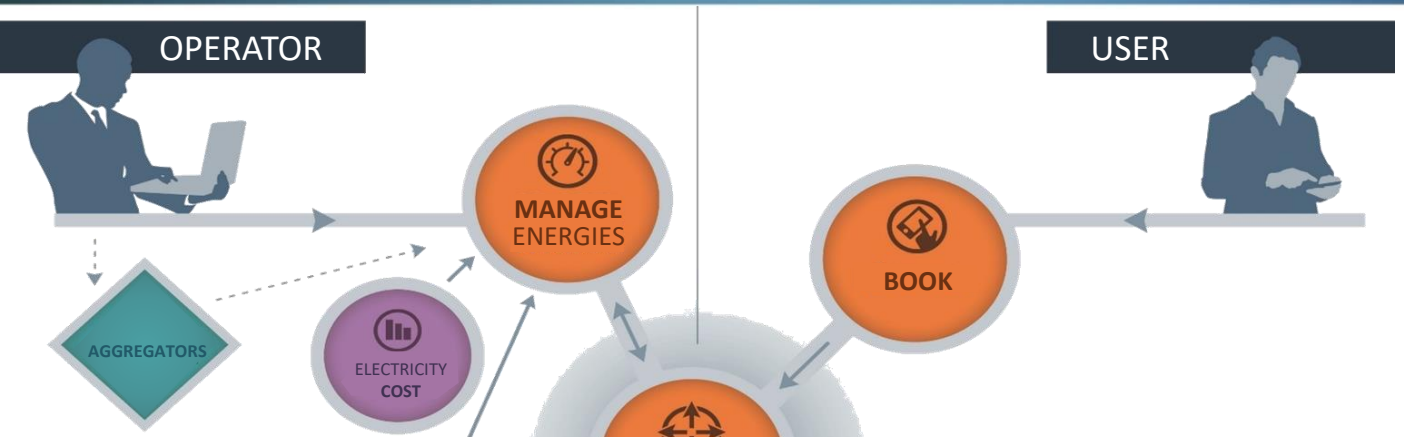
- Buffer storage **2nde life batteries**

https://www.youtube.com/watch?v=t9KVD9ZGdgo

Support of distribution infrastructures

2017 2020 2025

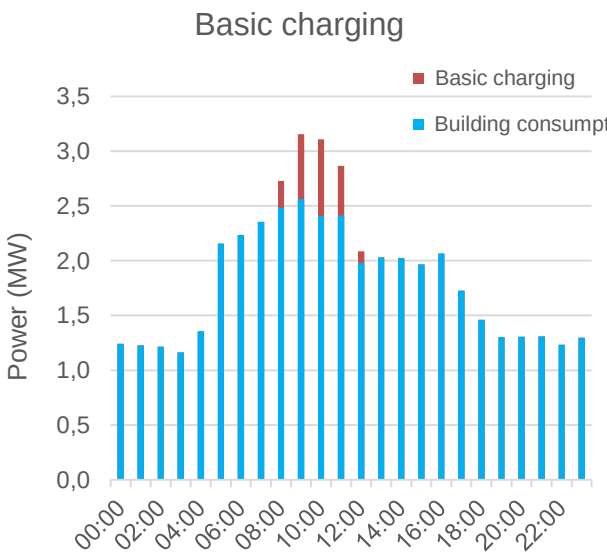
Supervision solution eco2charge

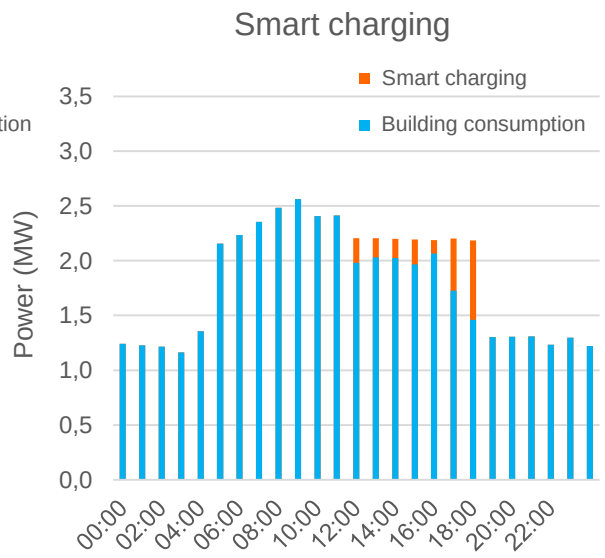


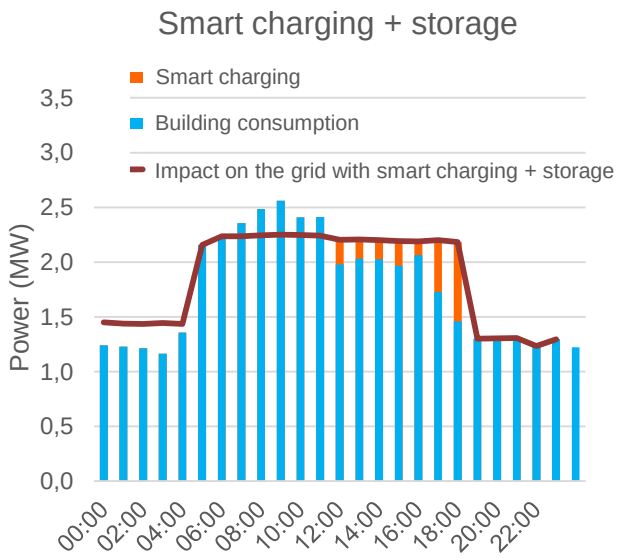
A global solution to develop charging infrastructures in buildings without impacting the electricity consumption (smart charging, storage) and taking into account the users' specific needs

Project objectives

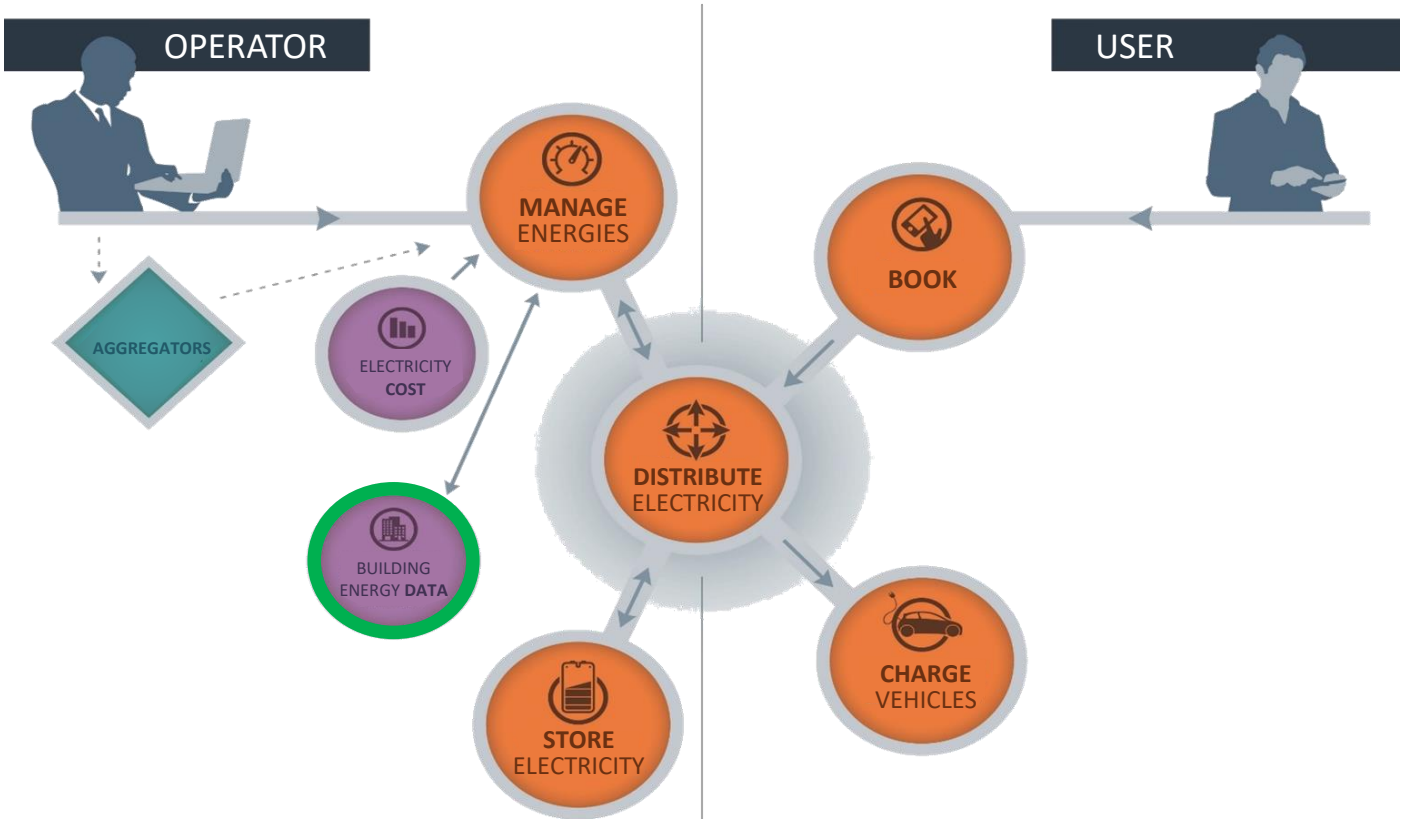
- ✓ Develop a complete solution to facilitate the massive deployment of charge points
- ✓ Deploy and validate the solution in two office buildings
- ✓ Load shifting and peak shaving to avoid adapting the existing electrical infrastructure
- ✓ Selfconsumption







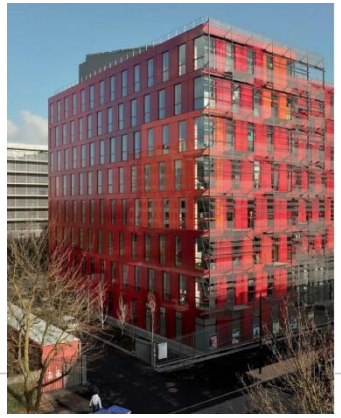
Building energy data



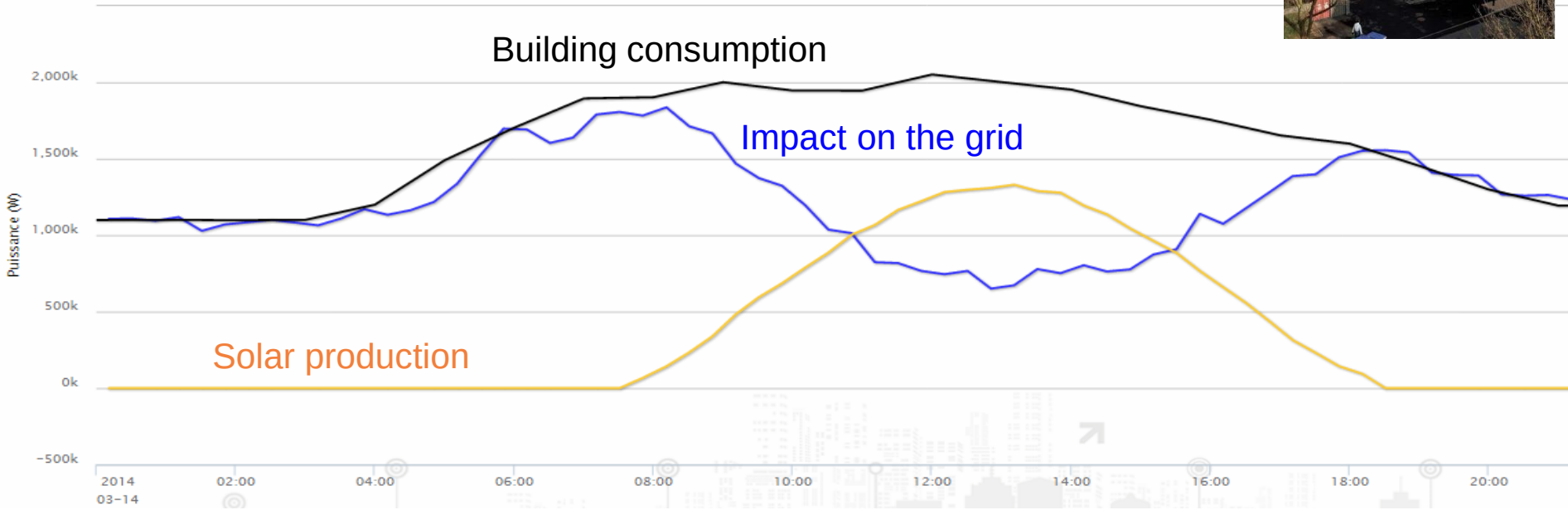
Building energy data

Challenger building
Bouygues Construction Head Office

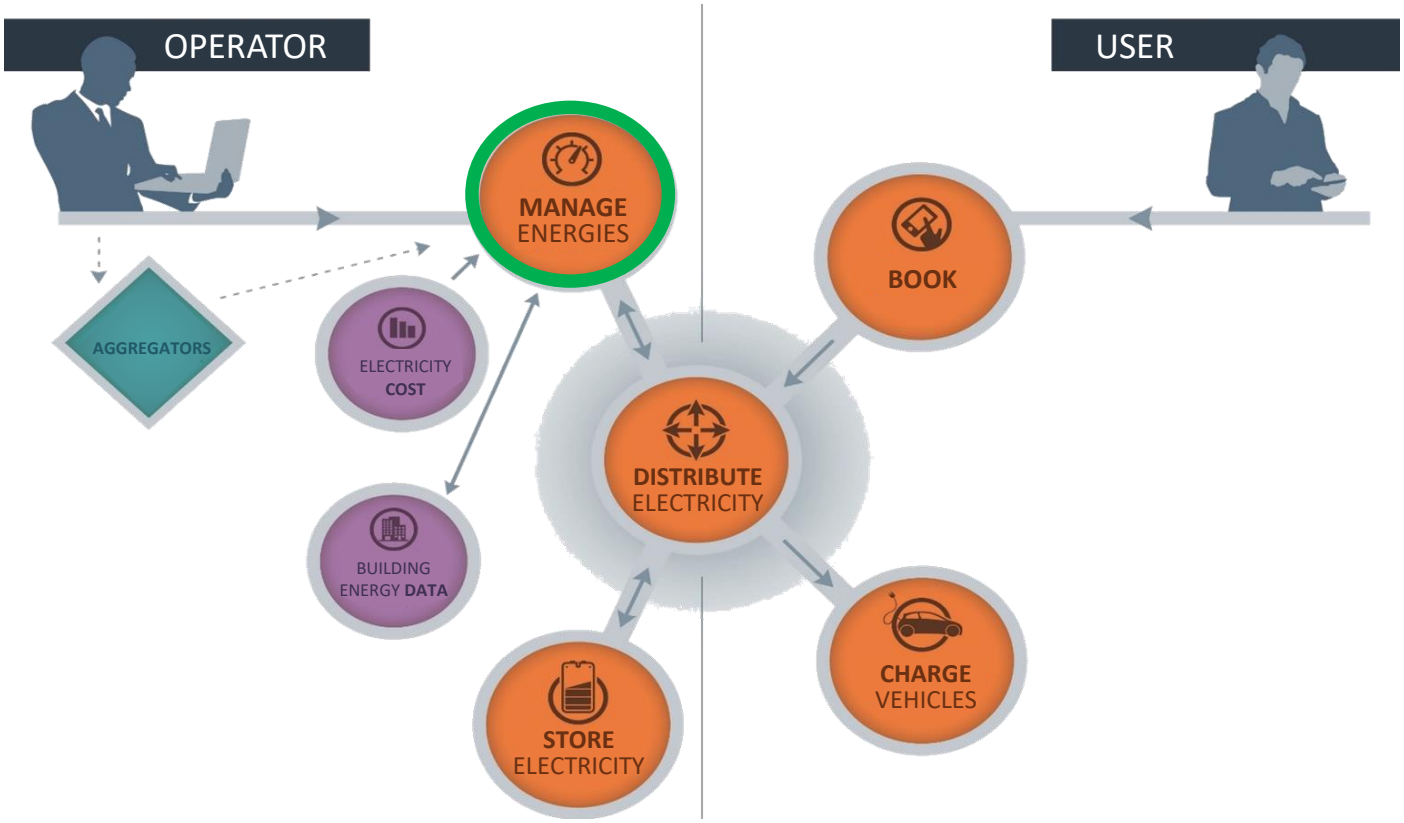
Australia building
Bouygues Energies & Services Head Office



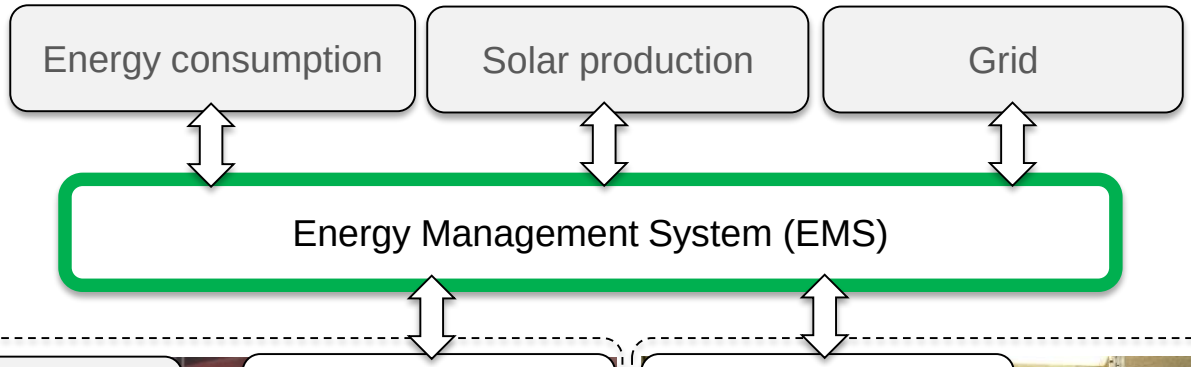
Building consumption

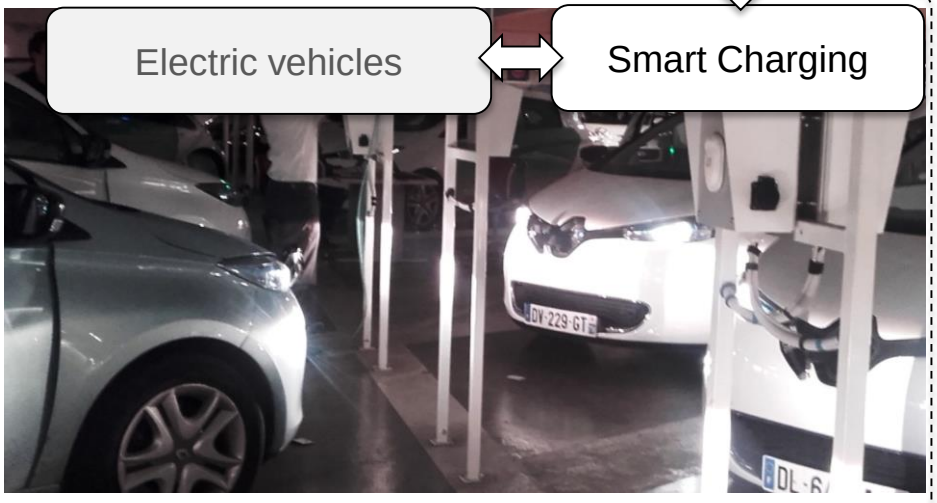


Manage energies

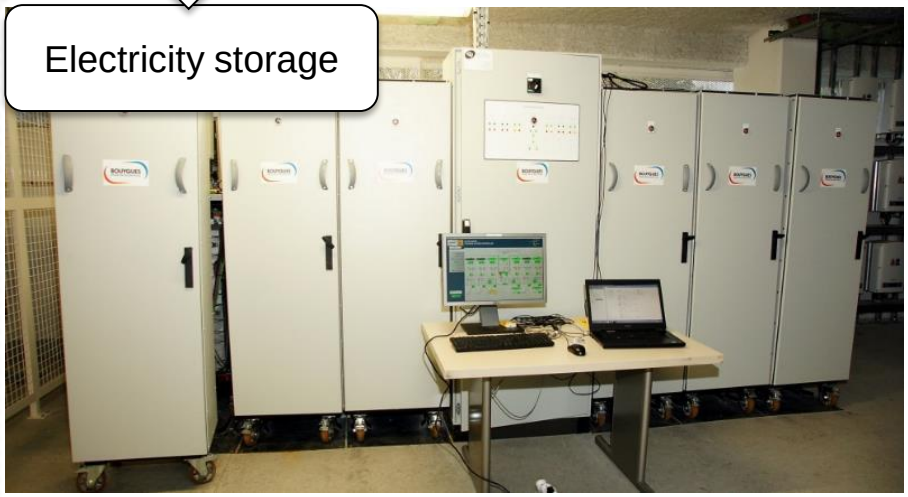


Manage energies





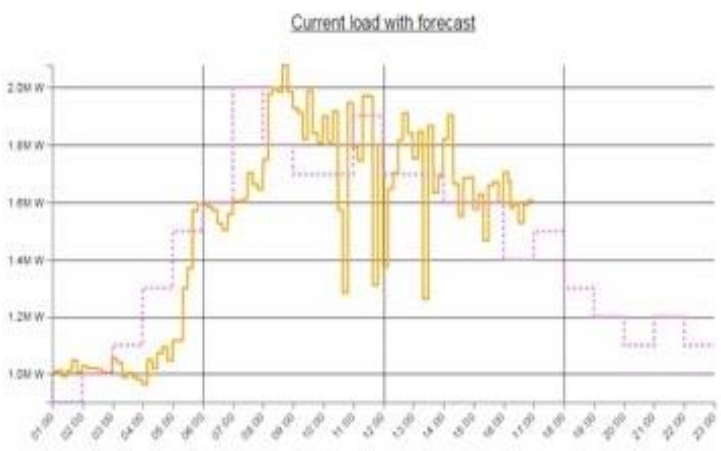
7 chargers G2, Ingeteam, Nexans – 7x7 kW

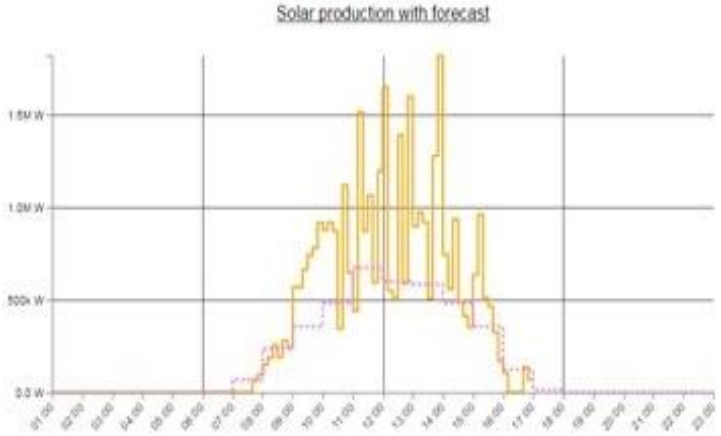


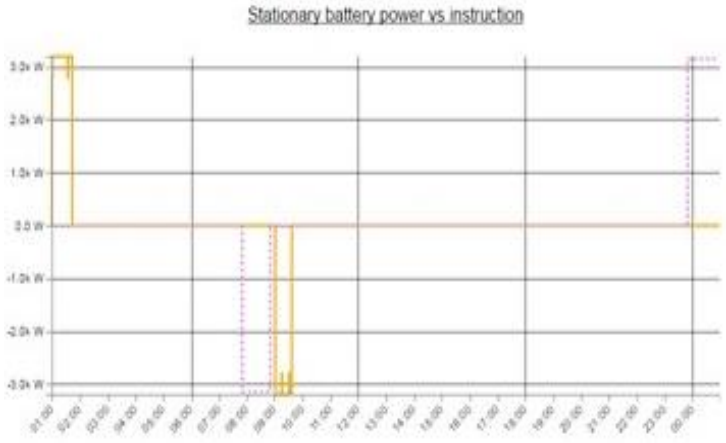
6 Kangoo batteries ZE – 66 kW / 66 kWh

Manage energies

Energy Management System web interface



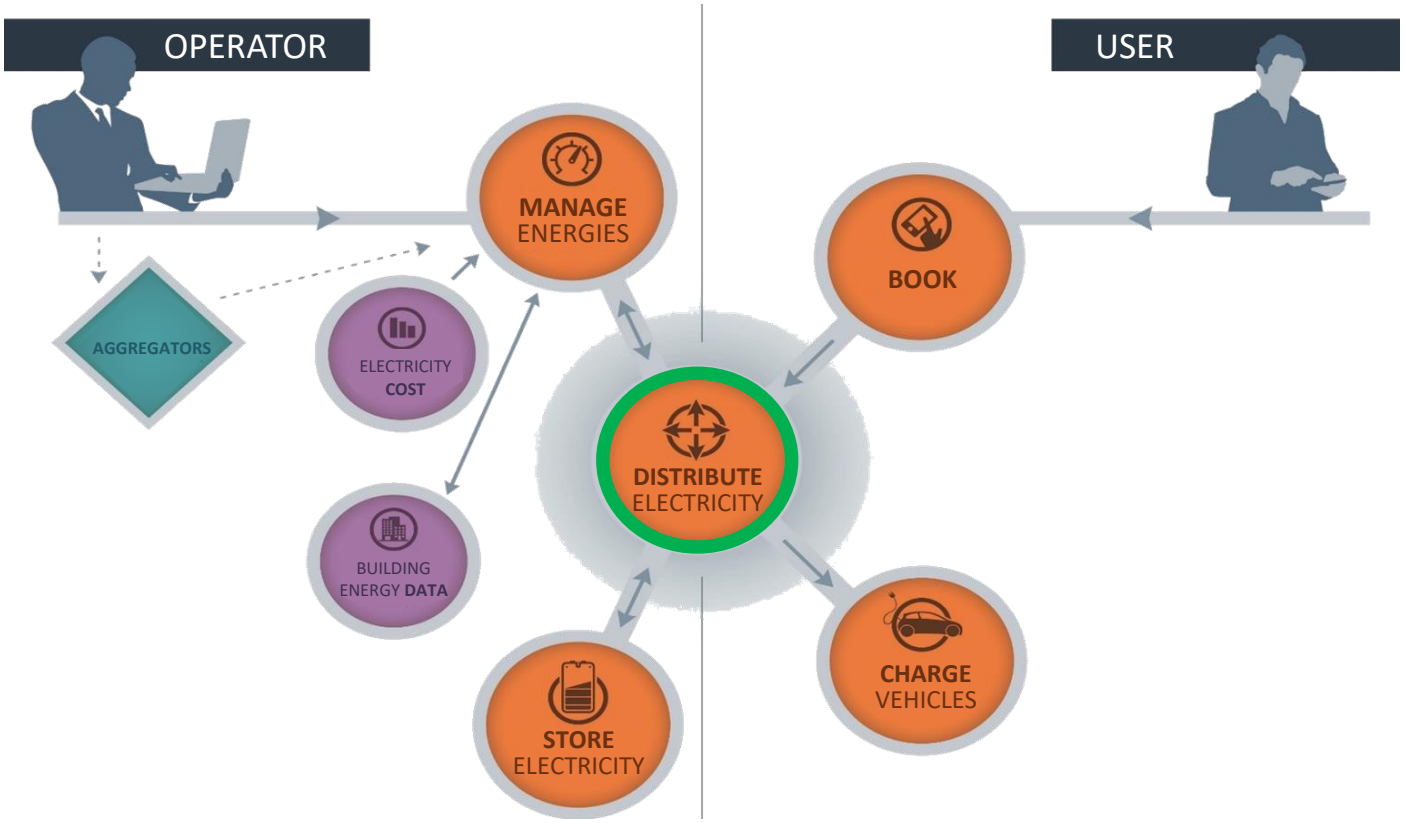




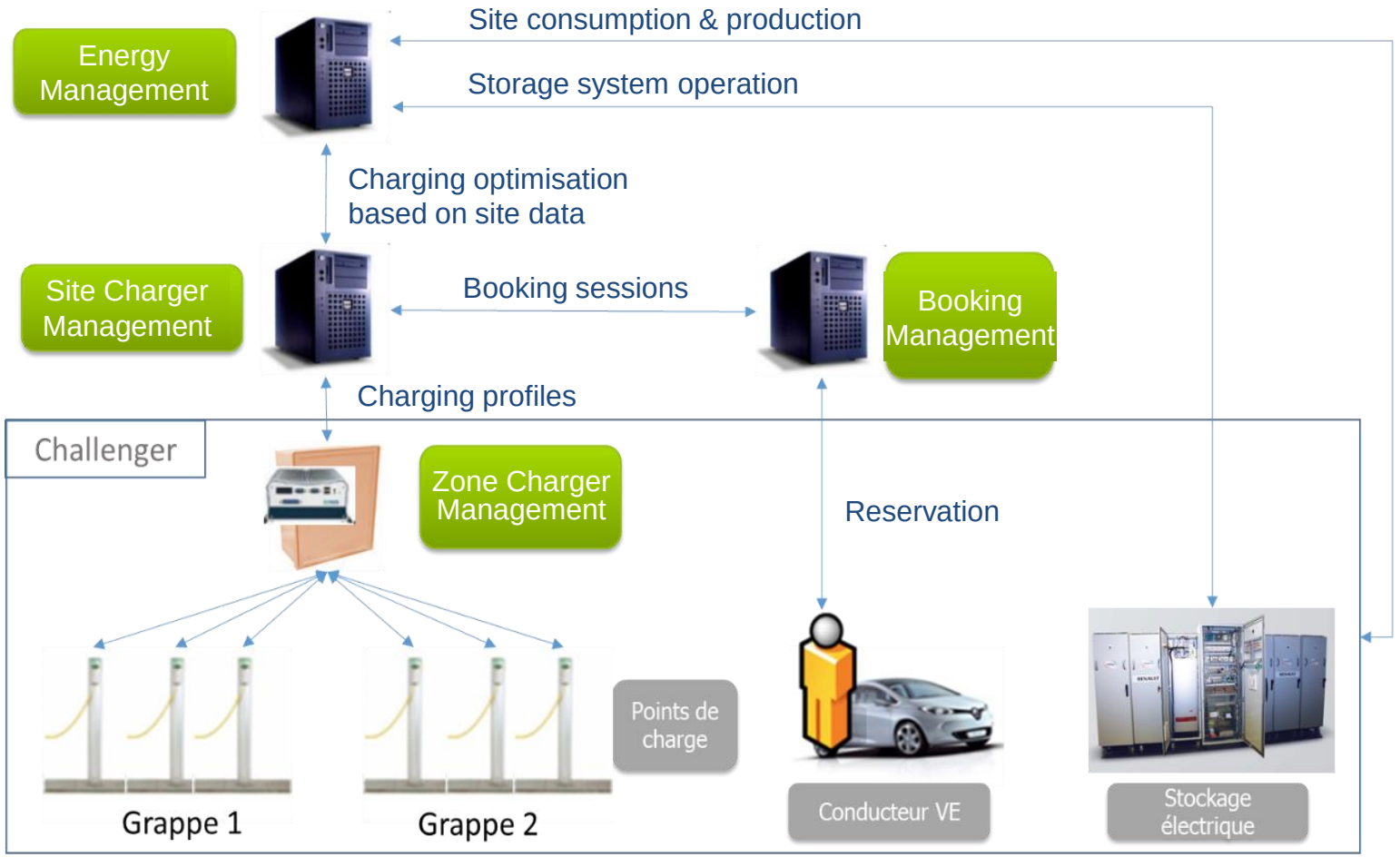
Day ahead forecast

Real time data

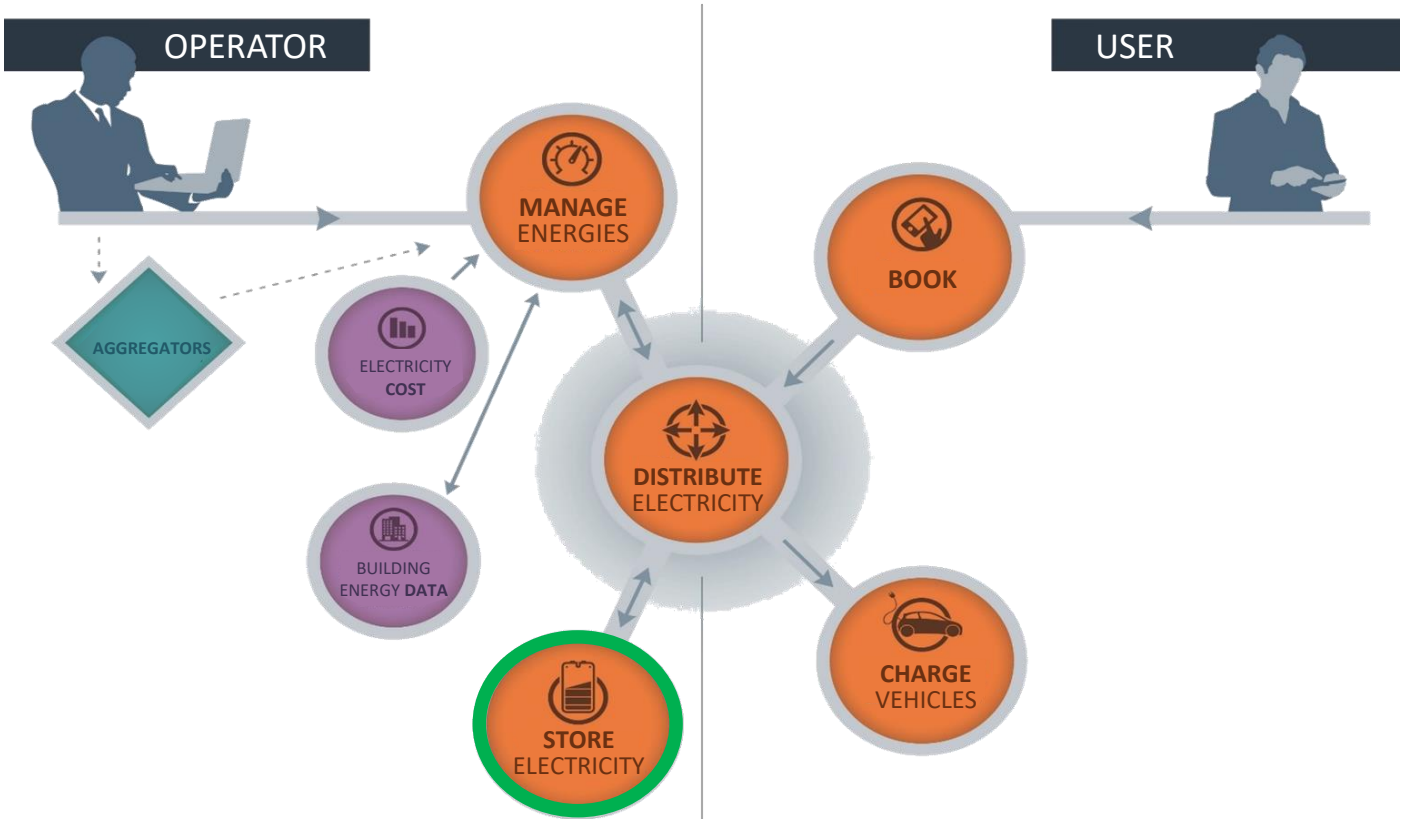
Distribute electricity



Distribute electricity



Store electricity

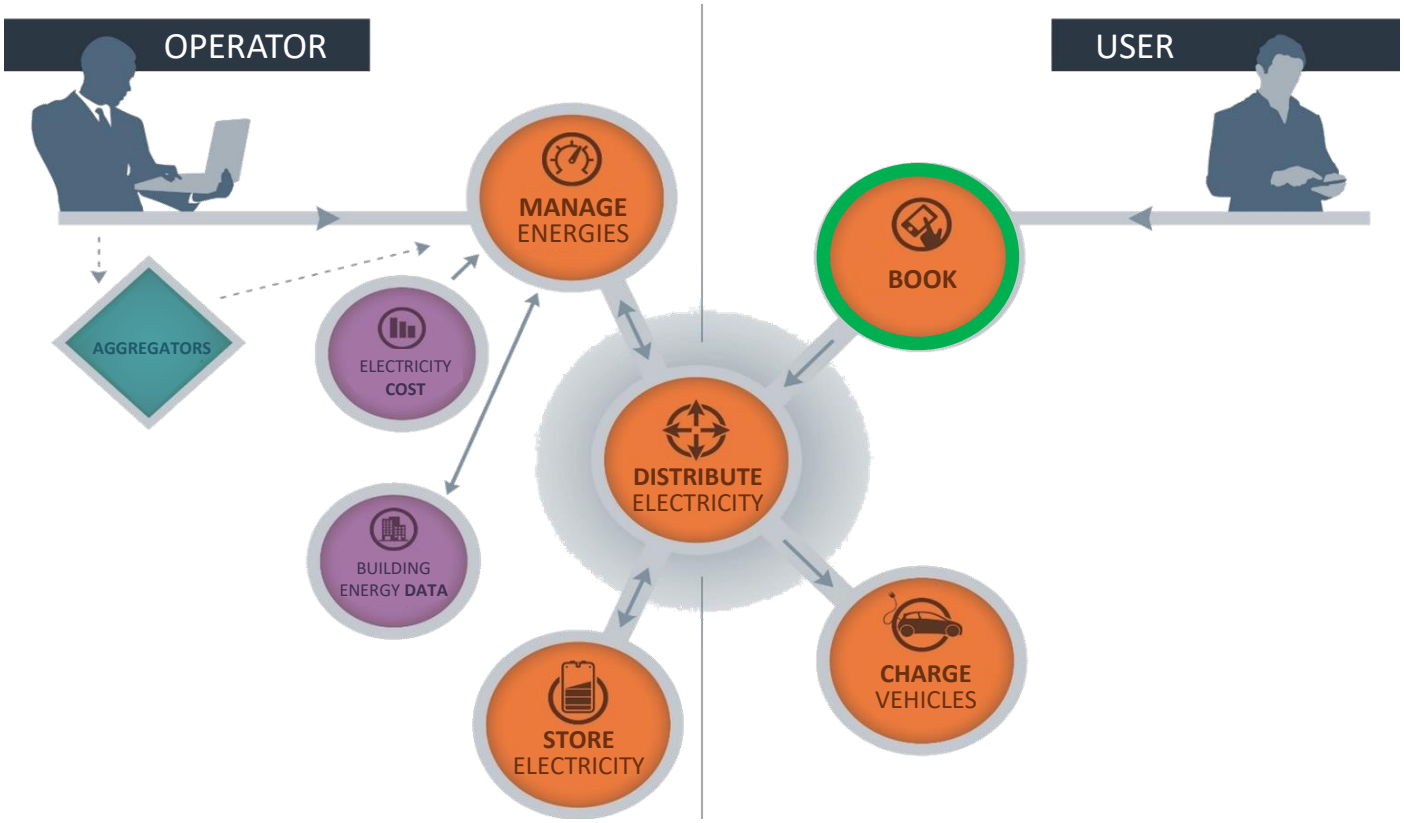


Store electricity

6 Kangoo batteries ZE
66 kW / 66 kWh

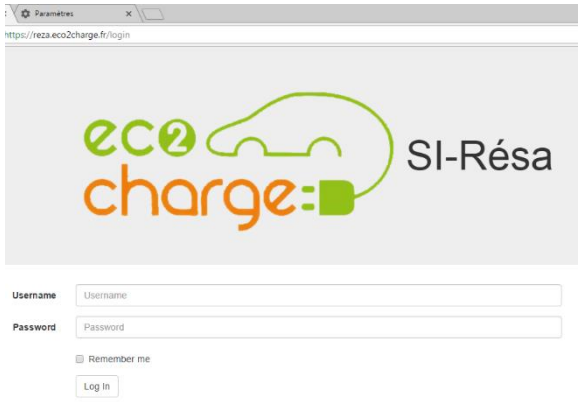
Storage system interface

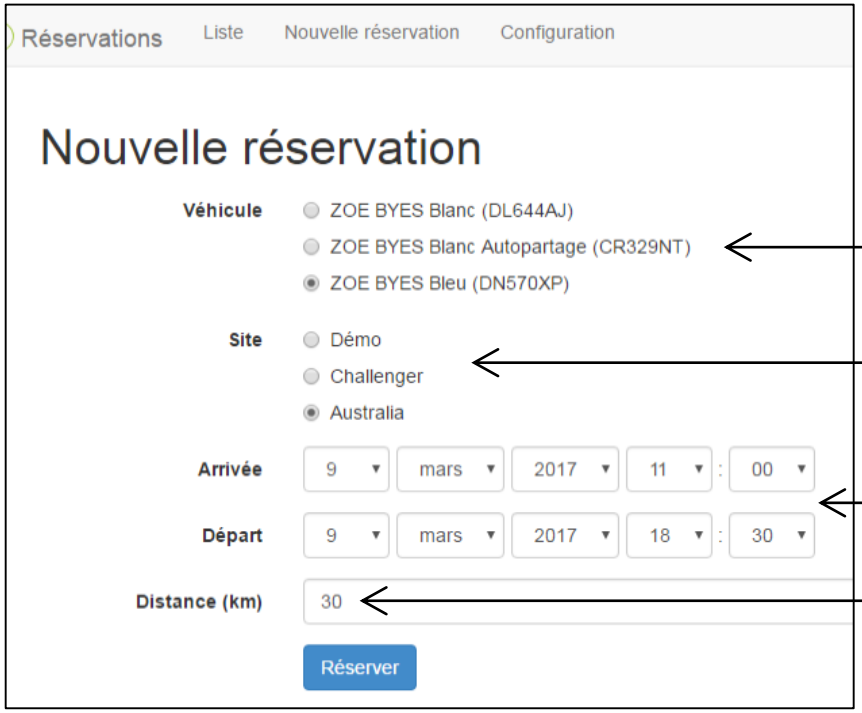
Book


OPERATOR
USER
MANAGE ENERGIES
BOOK
AGGREGATORS
ELECTRICITY COST
DISTRIBUTE ELECTRICITY
BUILDING ENERGY DATA
STORE ELECTRICITY
CHARGE VEHICLES

Book – User interface

User web interface





Select vehicle

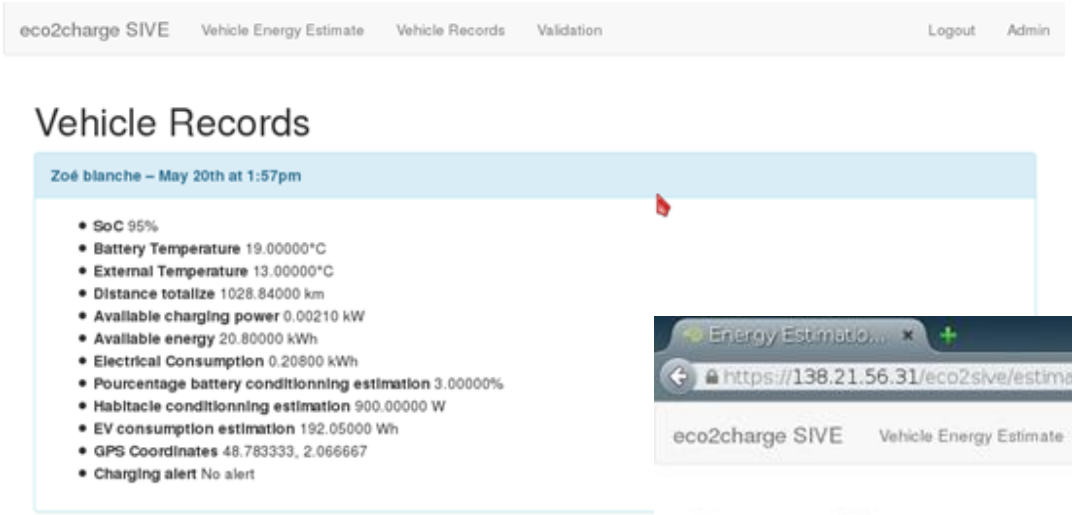
Select site

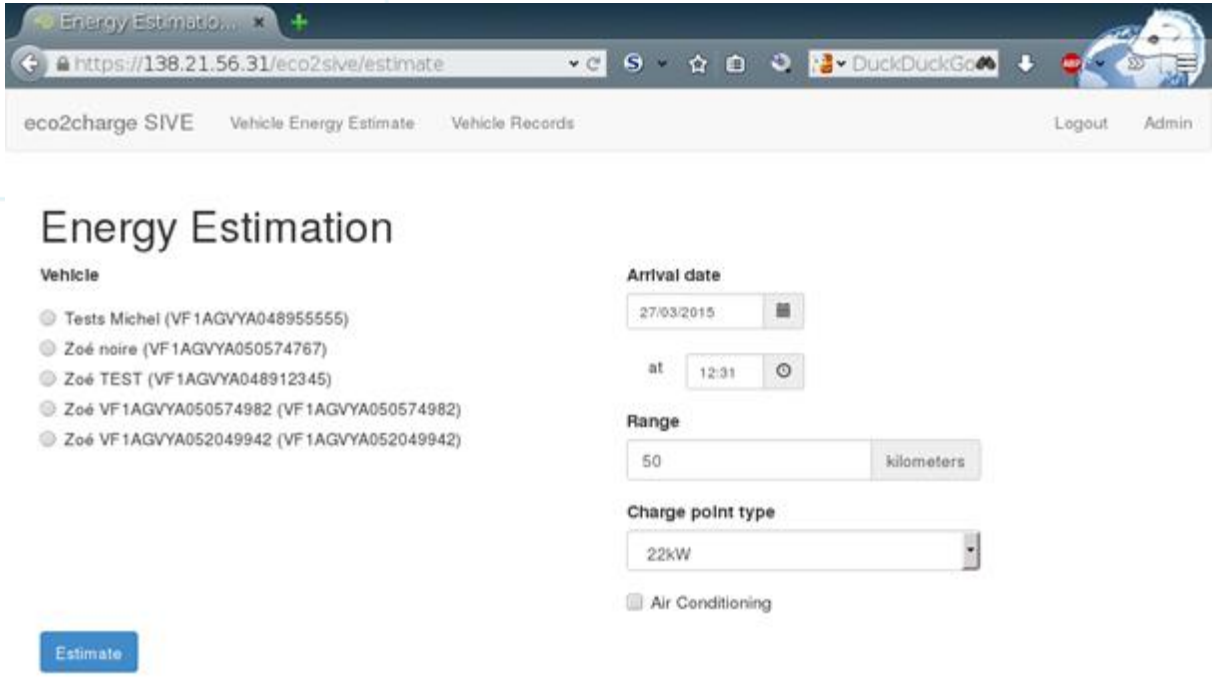
Select time slot

Indicate the autonomy

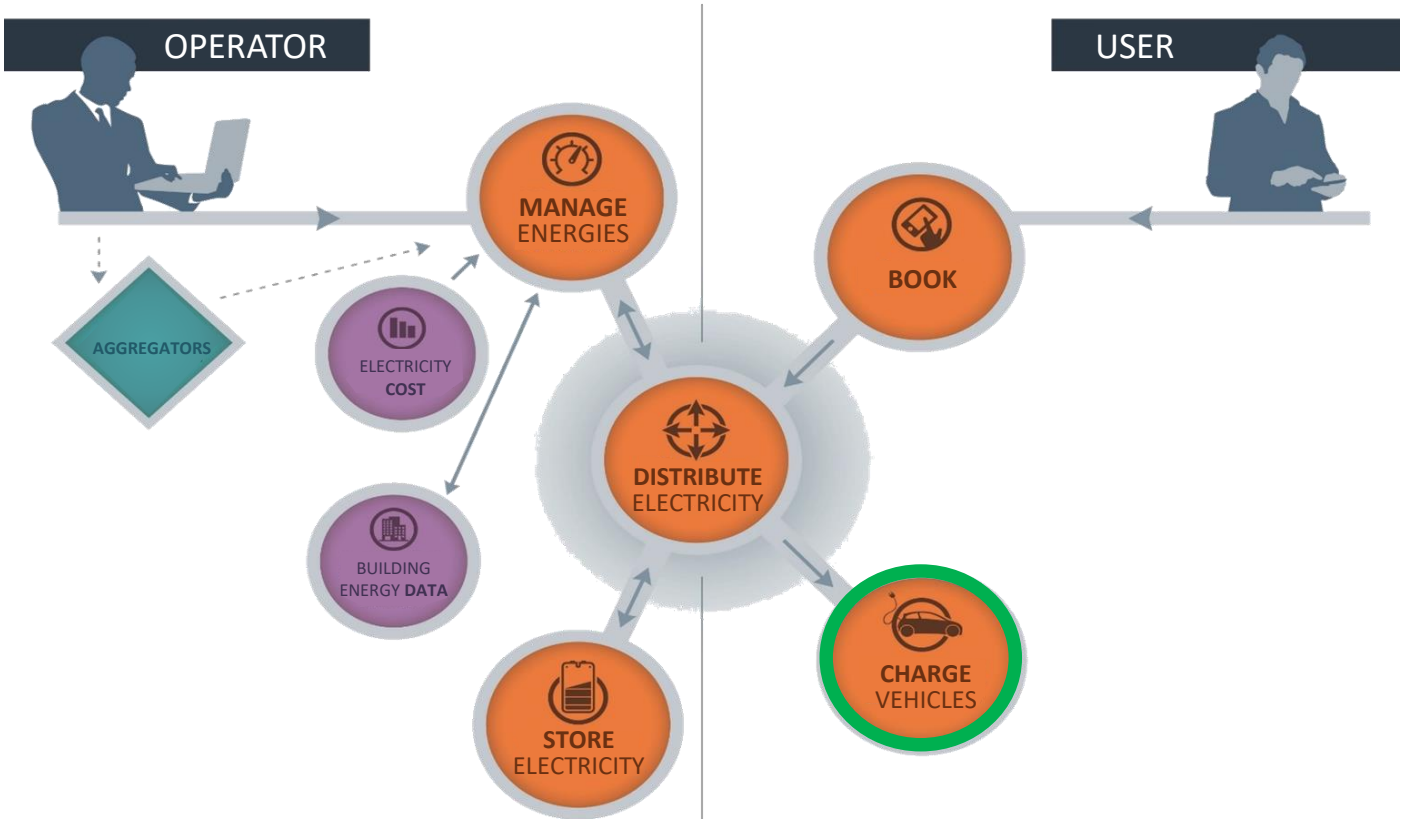
Book – EV details

EV details web interface

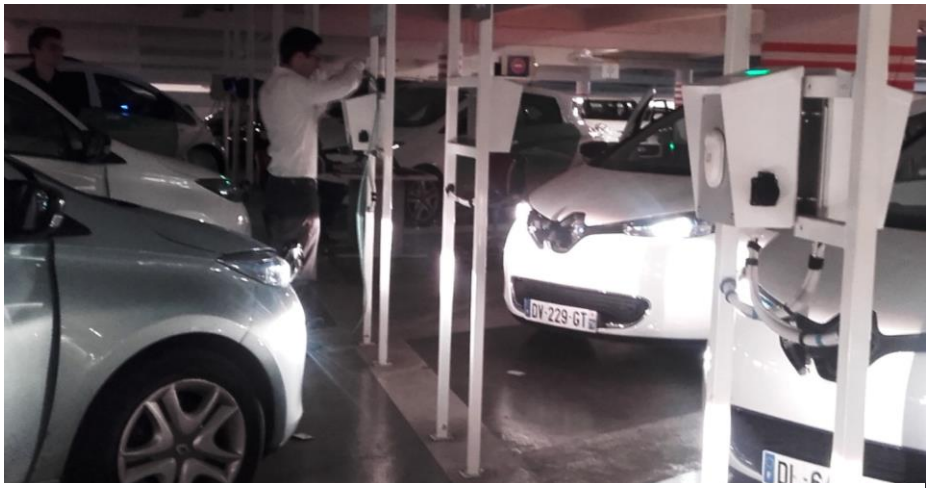




Charge vehicles



Charge vehicles – Chargers



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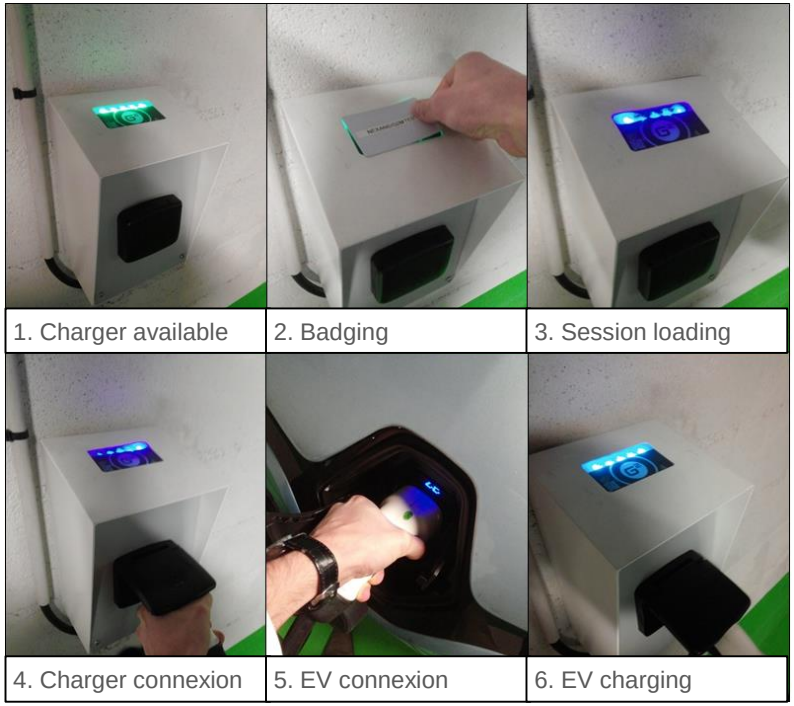
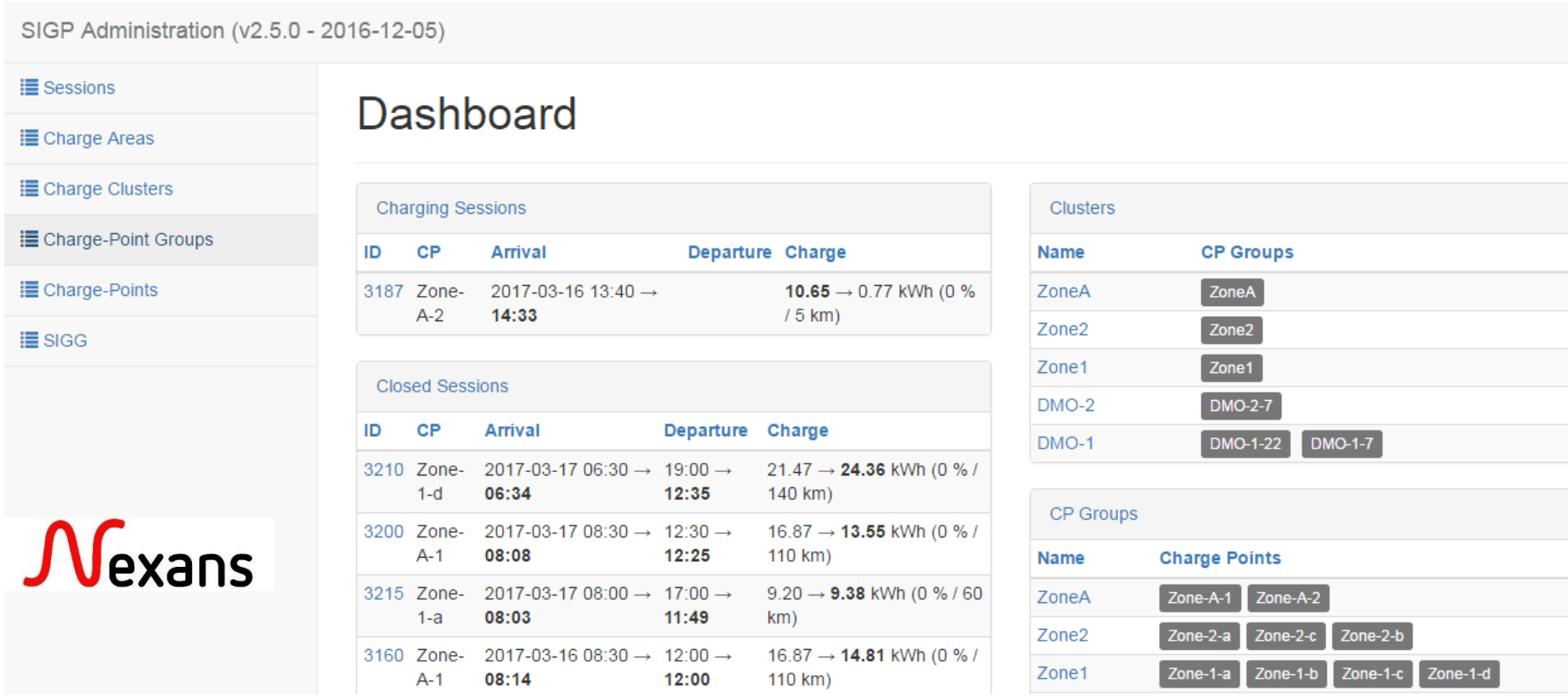
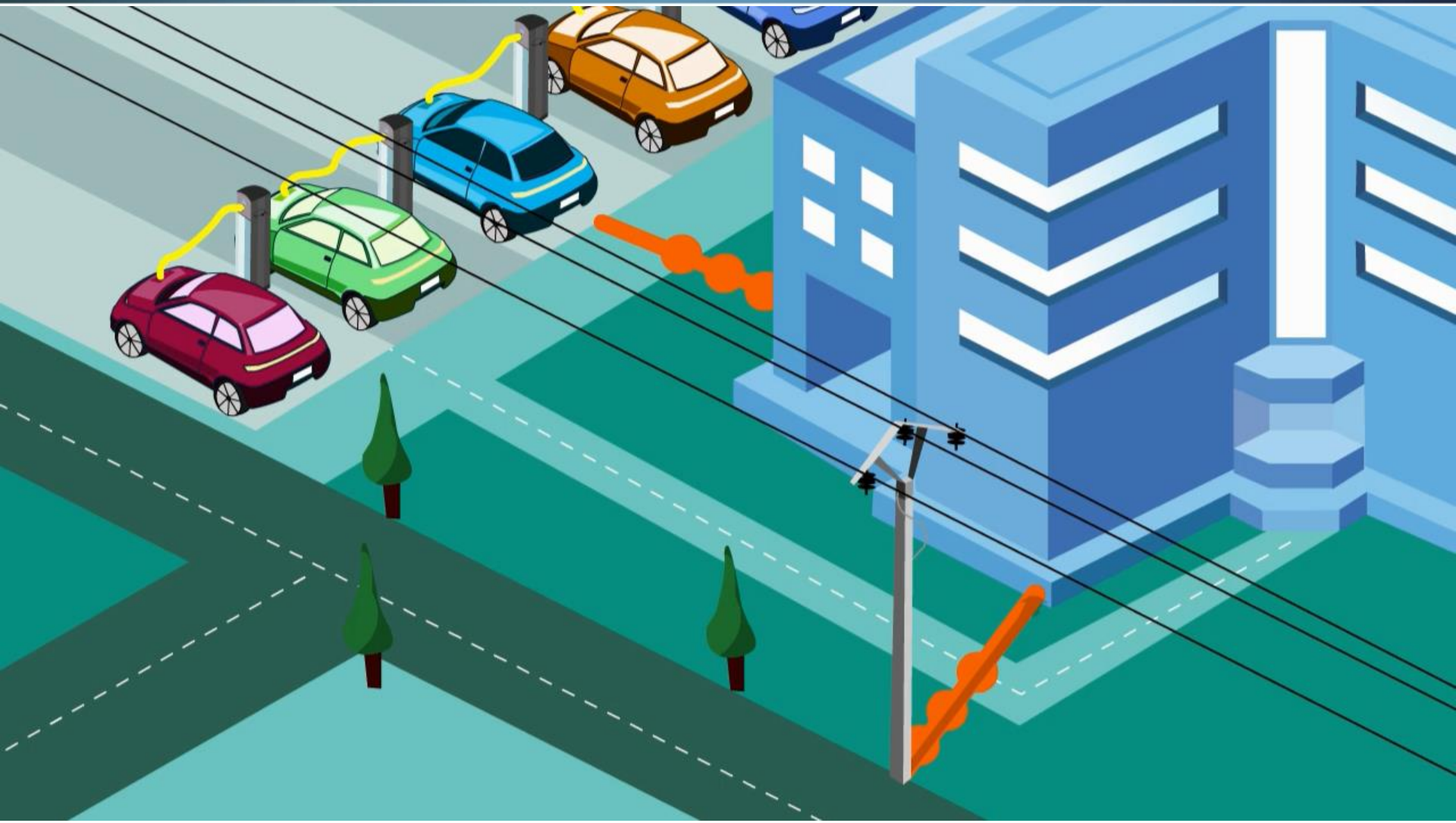


1. Charger available	2. Badging	3. Session loading
4. Charger connexion	5. EV connexion	6. EV charging

Charge vehicles – Operator web interface



Project video



https://www.youtube.com/watch?v=ClKZ03xkohA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