



EVSE charging energy management

Real-Time Upstream Emissions of EV During Recharge

ONLINE WORKSHOP

Alejandro Checa | May 27, 2021





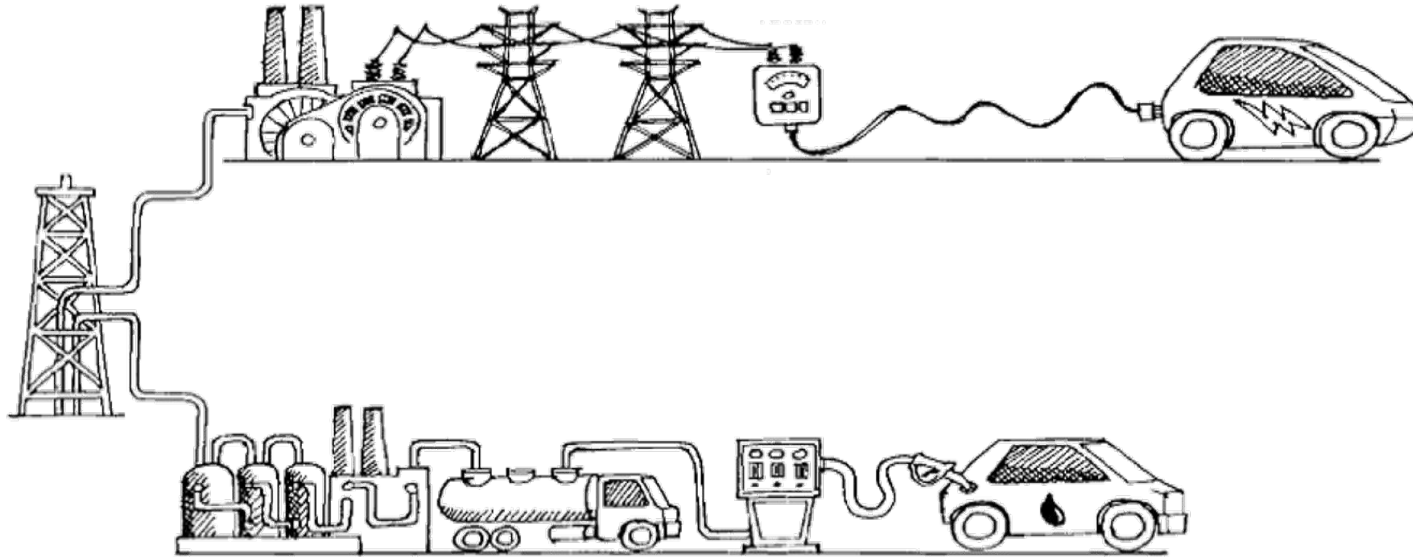
EVSE charging energy management

- 01 Well to Wheel EV vs ICEV
- 02 Power management
- 03 Management tools
- 04 Recharging emissions tracking
- 05 Ecocharge





01 Well to Wheel EV vs ICEV



Source: MIT, Electric Vehicles 101





02 Power management



Smart power sharing



Power boost



Dynamic power sharing



V2G/V2H



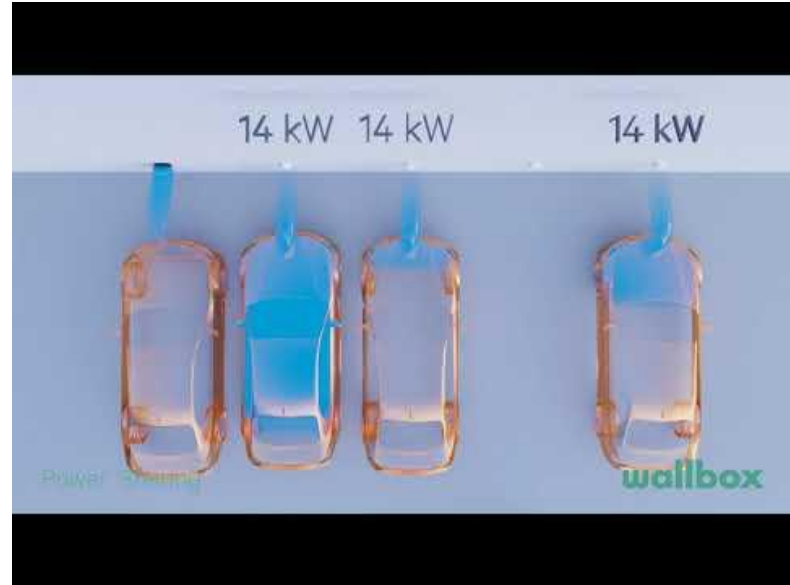


2.1 Smart Power Sharing



Smart power sharing

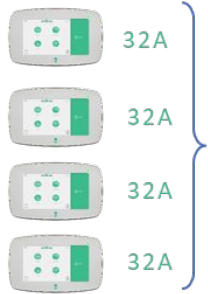
The current is adjusted to optimize the available power.





2.1 Smart Power Sharing

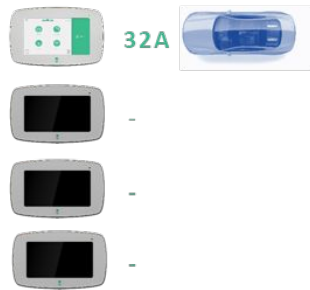
Example:



128A

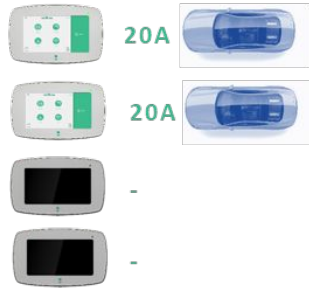
Max. 40A

First EV: Max. Current 32A



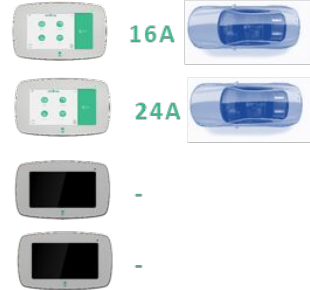
32A

2 EV: Distribution



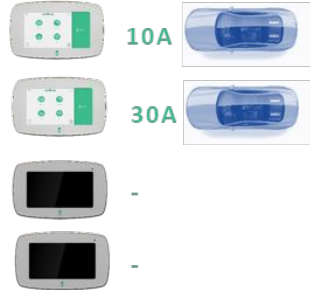
40A

2 EV: Limited demand



40A

2 EV: Final charging stage



40A

LIMIT FROM OUR INSTALLATION NETWORK





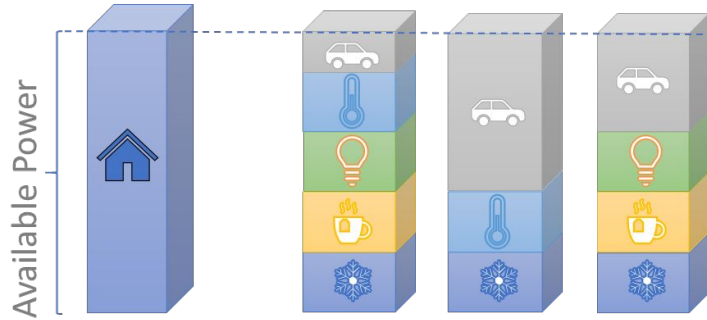
POWER MANAGEMENT

2.2 Power Boost



Power boost

- Avoid blackouts
- Optimizes the load capacity
- Automatic power control based on the Power Meter reading.





2.3 Dynamic Power Sharing



Dynamic Power Sharing



Smart Power Sharing

+



Power Boost

=



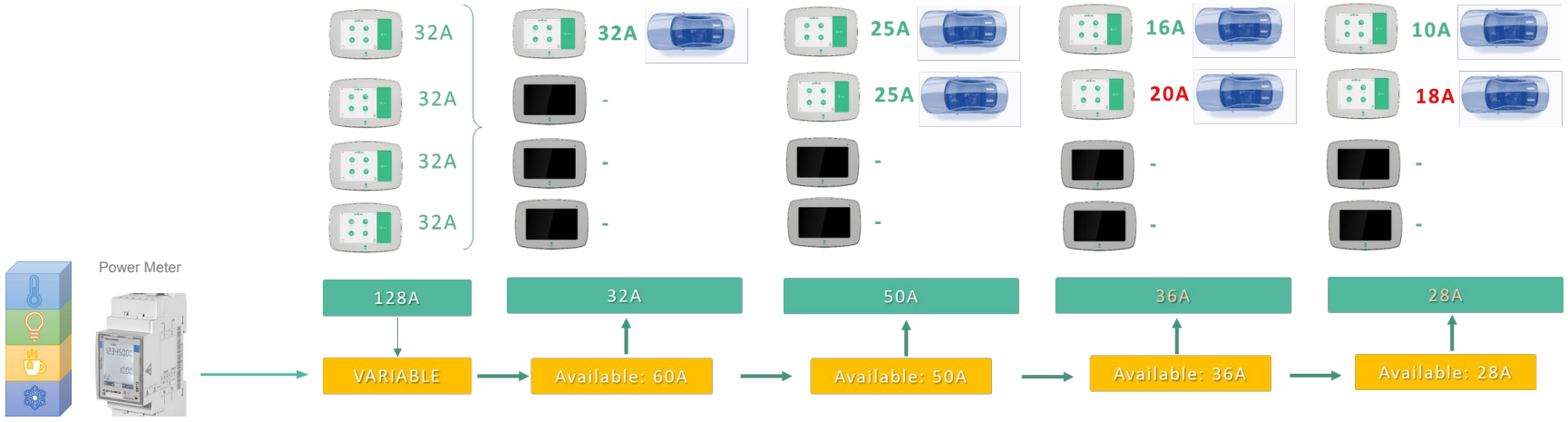
Dynamic Power Sharing





POWER MANAGEMENT

2.3 Dynamic Power Sharing



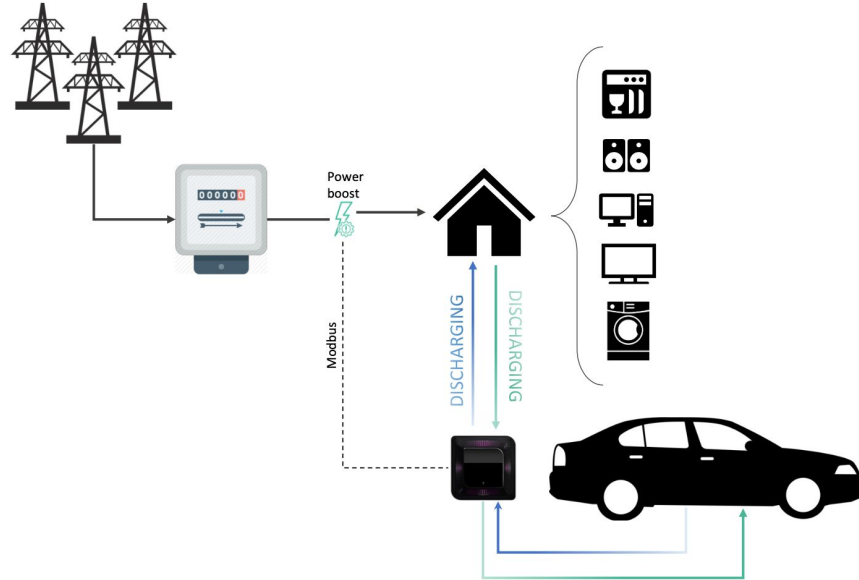
POWER MANAGEMENT

2.4 V2G/V2H



V2G/V2H

- V2G - Vehicle to Grid
- V2H - Vehicle to Home





03 Management tools



Power Boost



Remote set-up



Machine learning



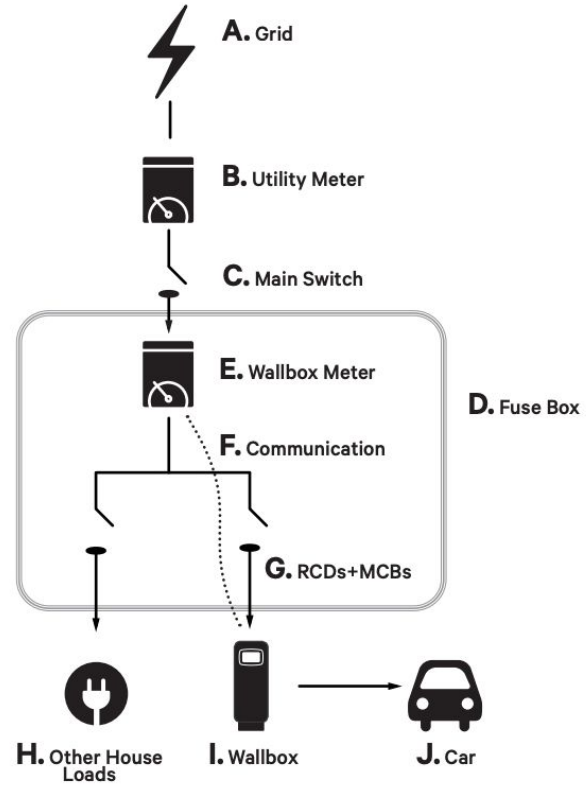


3.1 Power boost



Power boost

- Easy Installation
- Automation
- Optimization





3.2 Remote set-up & Machine Learning



Remote configuration



Information and management in real time



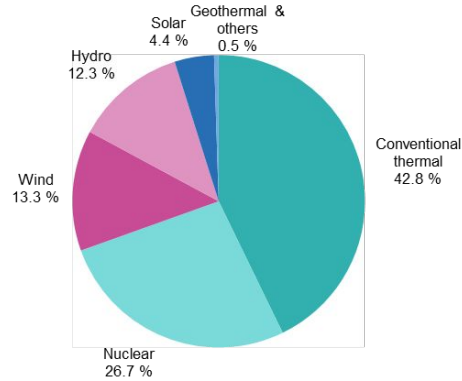
Over the air updates (OTA)



04 Recharging emissions tracking

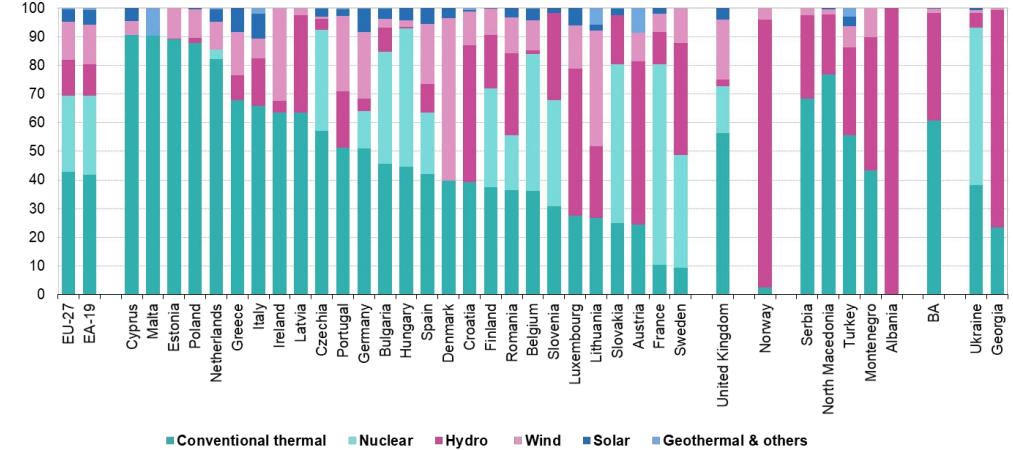
Electricity production by source, EU-27, 2019

(%)



Electricity production by source, 2019

(%)



Source: Eurostat (online data code: nrg_cb_pem)



Source: Eurostat (online data codes: nrg_cb_em, nrg_cb_pem)





05 Ecocharge



What our users need

1. Surplus harnessing
2. Charge with PV/Wind production
3. Charge with a specific amount of GE* production
4. Save money & energy
5. Know the amount of self produced energy used to charge the EV

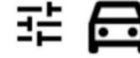
*GE: Green Energy



What do we provide



ECO
MODE



CUSTOM ECO
MODE



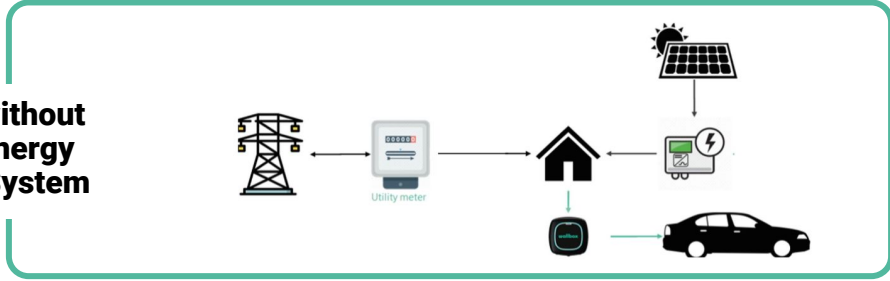
ECO CHARGE
STATS



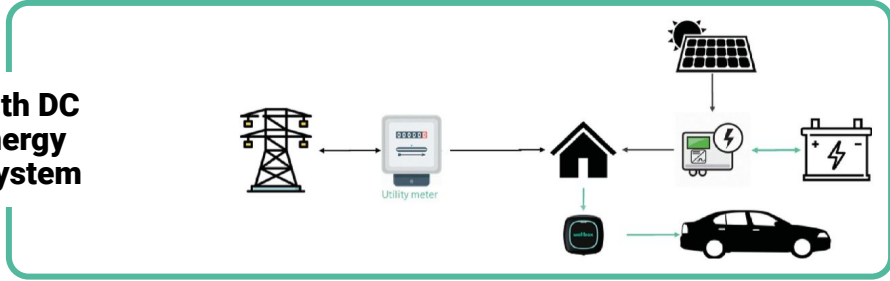
05 Ecocharge



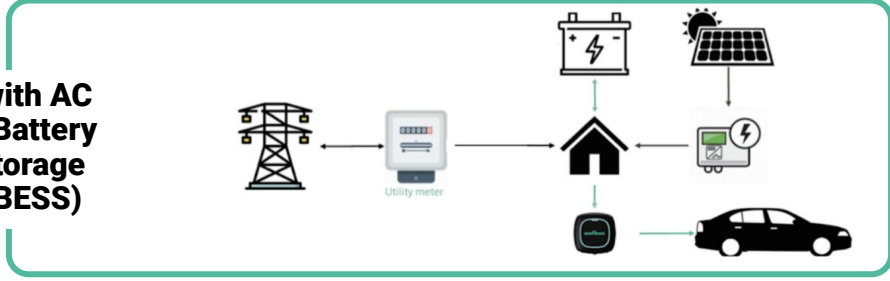
System without Battery Energy Storage System (BESS)



System with DC Battery Energy Storage System (BESS)

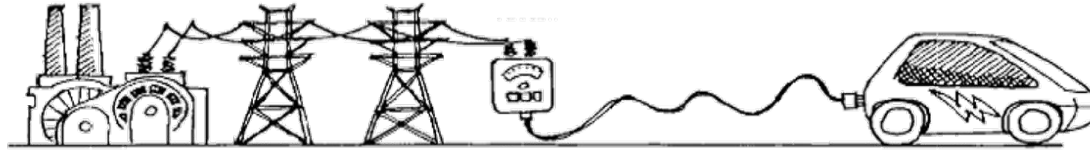
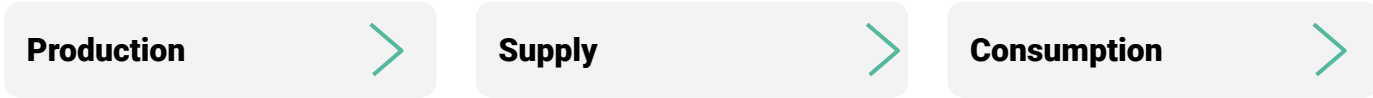


System with AC Coupled Battery Energy Storage System (BESS)





06 Takeaways



HARMONIZATION





Thank you!

Alejandro Checa

alejandro.checa@wallbox.com
+34 634 24 29 35



wallbox 