



Cleantech Forum **Europe** | Antwerp

# The EV Ecosystem: What are the Opportunities for Incumbents and Innovators?



# The EV Ecosystem: Incumbents and Innovators



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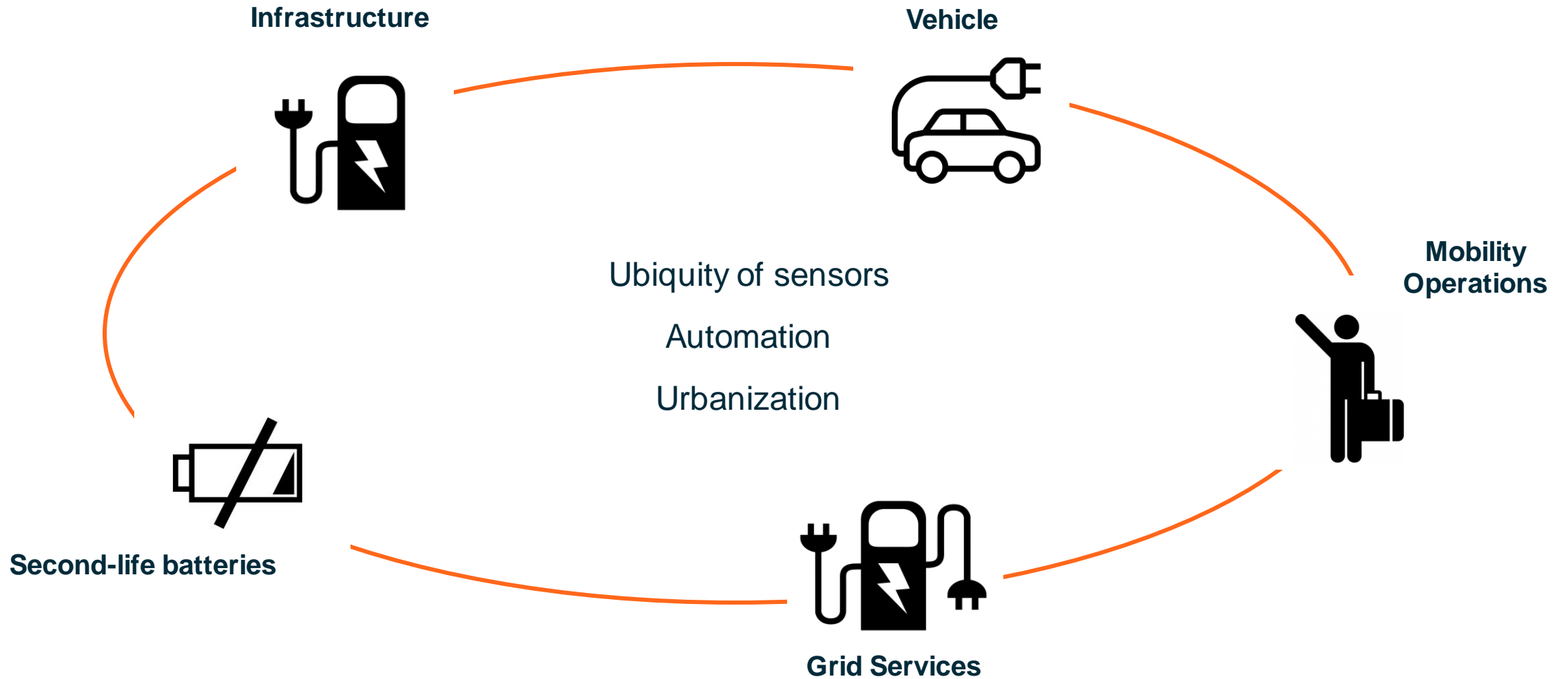


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MotionWerk

# Electrification of mobility



# SHARE & CHARGE

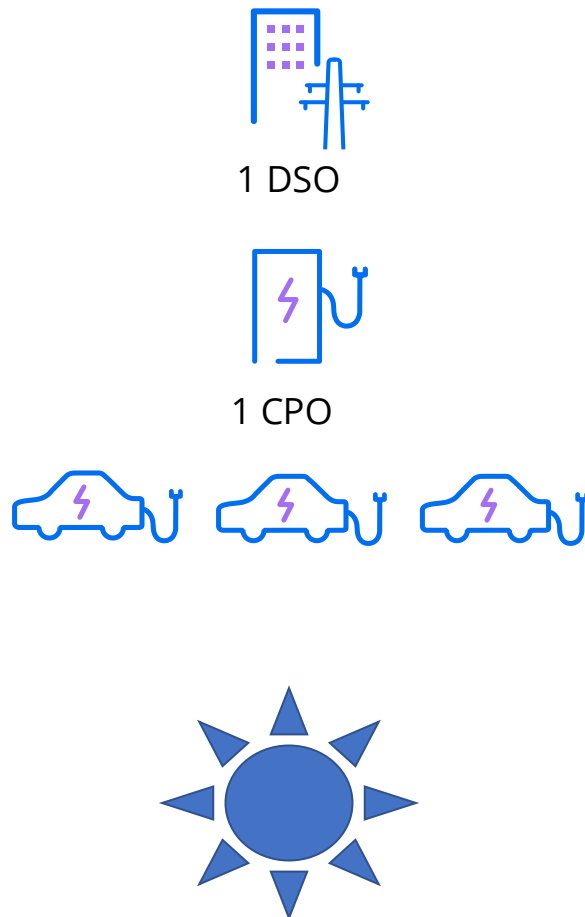
Cleantech 2018



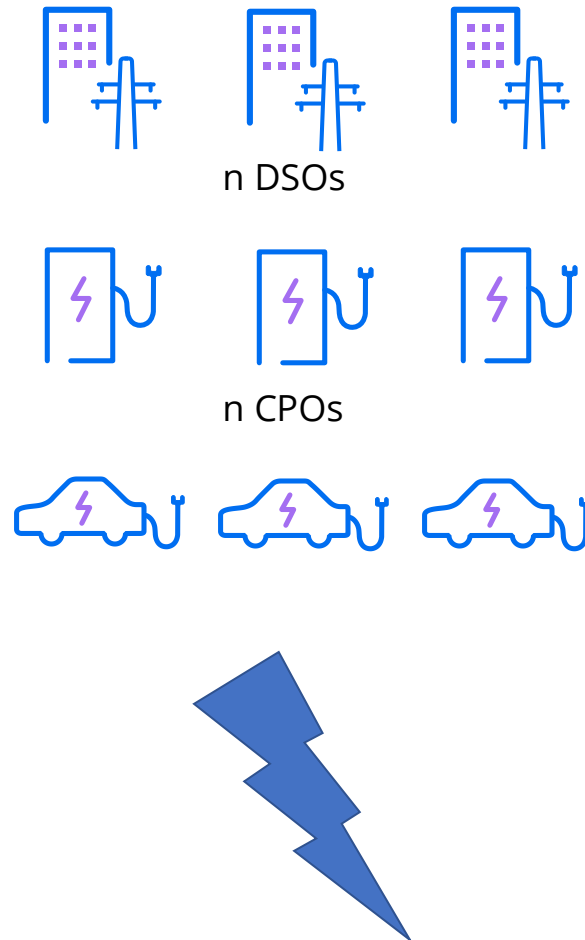


## Missing interoperability leads to major problems

## Isolated energy system

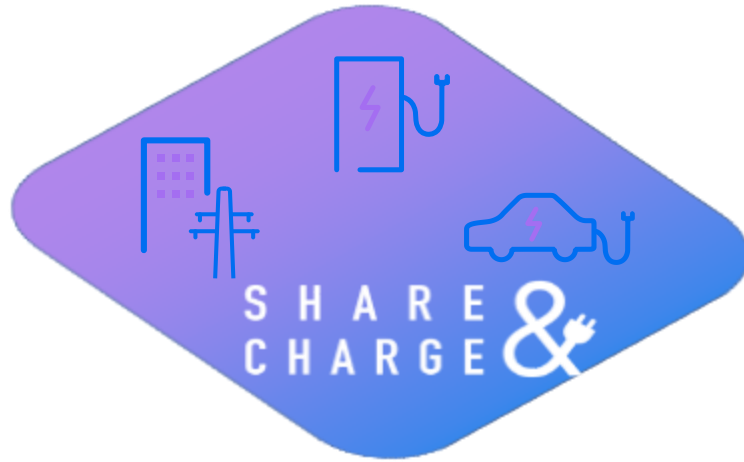


## Complex energy system

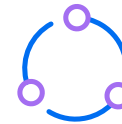


Emobility market is very fragmented with various players and a lack of interoperability for communication and even more for settlement

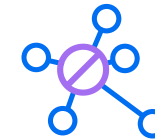
- No seamless charging experience for EV drivers
- Complex settlement processes for MSPs and CPOs
- No integration into the grid may lead to expensive grid stabilisation
- No tracking of origin of power
- ...



Share&Charge provides an **open source & decentralized** digital protocol for **seamless and smart** electric vehicle charging.



Blockchain technology comprises direct transactions for significant reduction of complexity



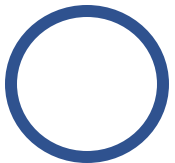
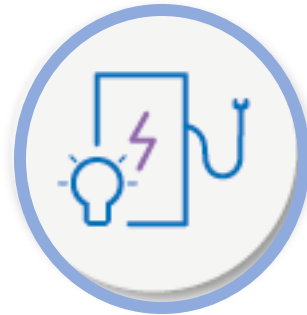
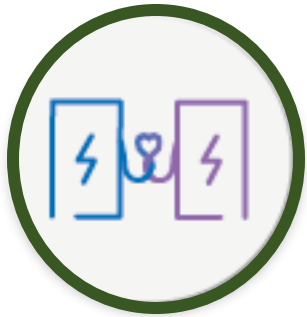
No central entity for coordination needed but only a decentralised protocol



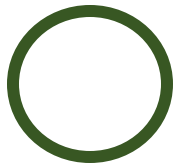
Open source leads to a high level of transparency and contribution of global crowd



Permissionless blockchain solution allows accessibility for everyone



Pilot project ongoing



Live product



### Description:

EV drivers can seamlessly charge everywhere in Europe with one blockchain wallet

### Status:

First pilot phase in November 2017 successfully finished, now integrating CPs and MSPs into new architecture and

### Partners:

- Innogy
- Enexis/Elaad
- Fortum
- EDF/Sodetrel
- Fortum
- VKW
- Enviam

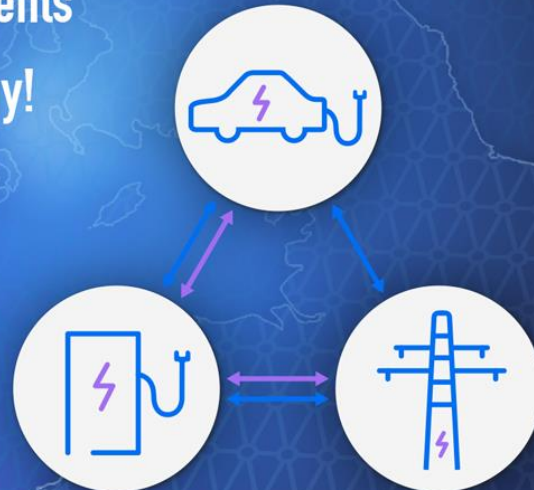




## CPOs – JOIN OUR UK PILOT NOW

and experience the benefits  
of blockchain technology!

[partnering@motionwerk.com](mailto:partnering@motionwerk.com)



SHARE  
& CHARGE

### Description:

EV drivers can seamlessly charge everywhere in UK with one blockchain wallet

### Status:

Pilot ongoing integrating 1 MSP and 3 CPOs

### Partners:

- Leading automotive
- CPOs

**Description:**

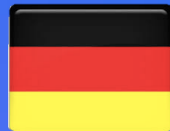
P2P sharing of charging points in order to earn some extra money and reduce range anxiety of EV drivers. Running on public ethereum chain

**Status:**

Go live in April 2017 with 1250 integrated charging poles and 500 registered users in Germany. Pilot in USA

**Partners:**

Innogy  
Private CPOs  
Bank & Payment provider for stable coin





**Description:**

Integration of wallet into the vehicle control unit of a car in order to allow direct payment of the car and optimization according to driver's profile. First steps of integrating ISO15118 for smart charging

**Status:**

Ongoing, roadshow in Germany planned for September 2018

**Partners:**

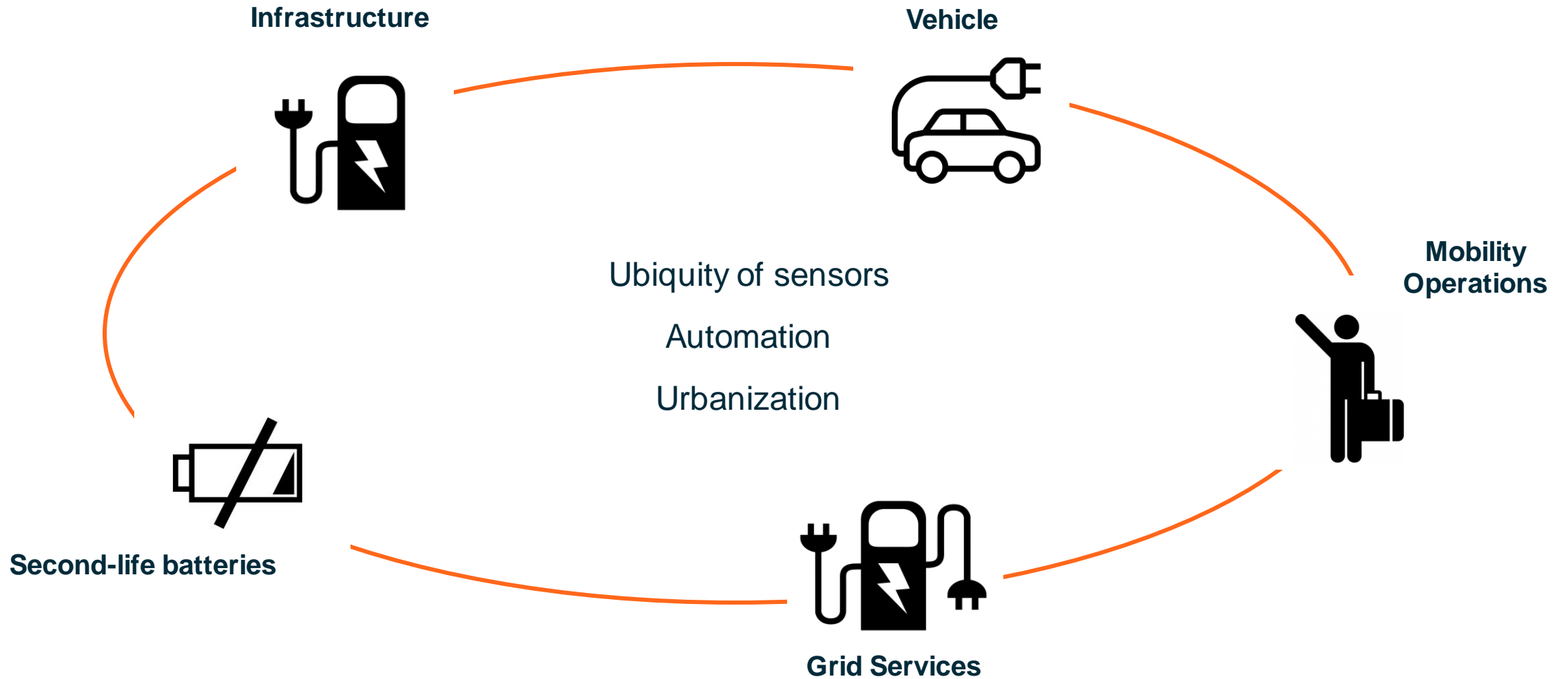
Under NDA

# SHARE & CHARGE

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om



# Electrification of mobility







# 2<sup>nd</sup> life EV batteries and stationary energy storage

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Matthew Lumsden, CEO, Connected Energy

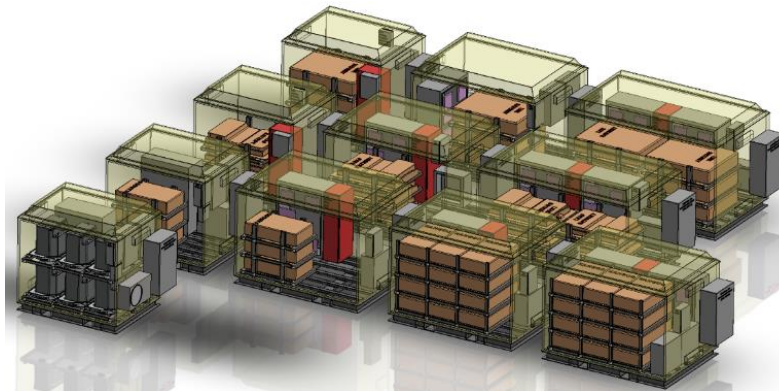
[Matthew.Lumsden@c-e-int.com](mailto:Matthew.Lumsden@c-e-int.com), 00(44) 7909681334

# Connected Energy is an energy storage solutions provider



The E-STOR energy storage hardware

Low cost, modular system, simple battery feedstock exchange

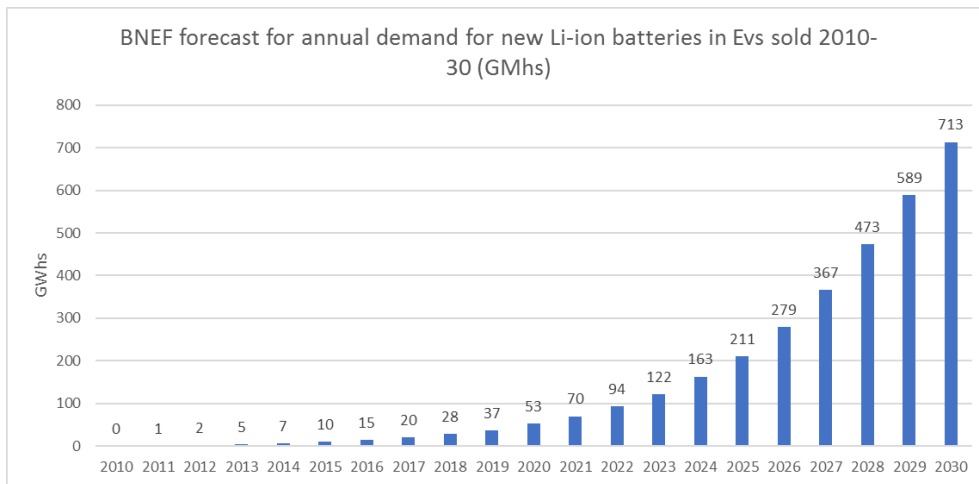




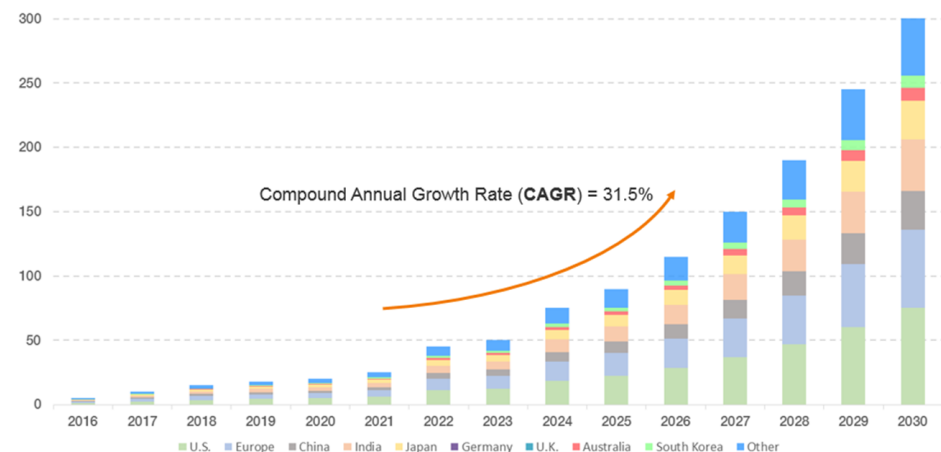
# 2nd life EV batteries – the opportunity

## Changing the face of energy storage

Source: Bloomberg New Energy Finance



Forecast Global Cumulative Energy Storage (GWh)

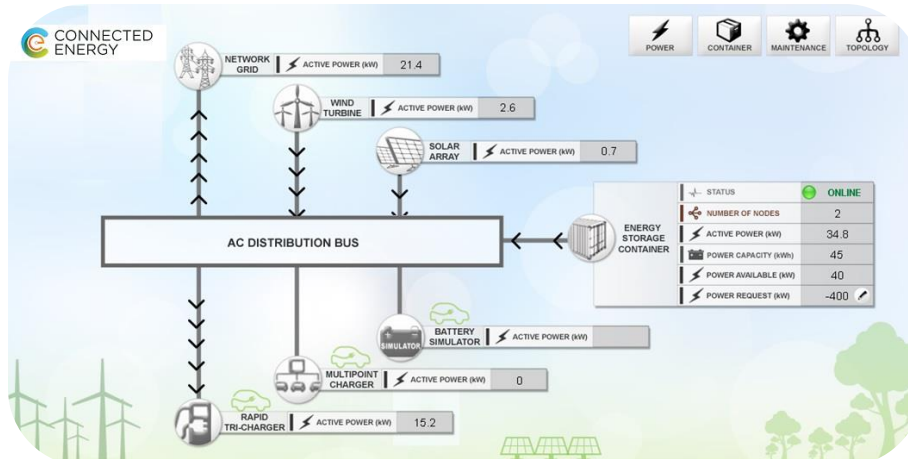


In 2030 ~50% of global stationary energy storage could be met by 2<sup>nd</sup> life EV batteries

Battery lifetime	Estimated 2030 cumulative 2nd life availability (GWh)
14 years	41 GWhs
10 years	178 GWhs
8 years	342 GWhs

# E-STOR applications

Functional and commercial versatility



# Thank you

Matthew Lumsden, CEO, Connected Energy

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# Electrification of mobility

