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Envisioning the future of sustainable mobility

Digital Mobility Solutions Conference

Session 3: Smart Energy Management When Deploying Electric Buses

BUSWORLD foundation

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Full Grid-to-Plug Charging Infrastructure

#Connect #Charge #Optimize

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Both loads and power sources are changing



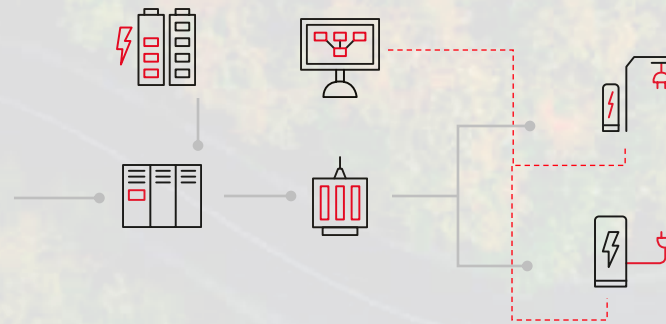
Generation

New energy sources

- High variability
- Low predictability
- Local production

Grid limitations

Peak loads



← **Connect safely, charge smartly** →



Load

New loads

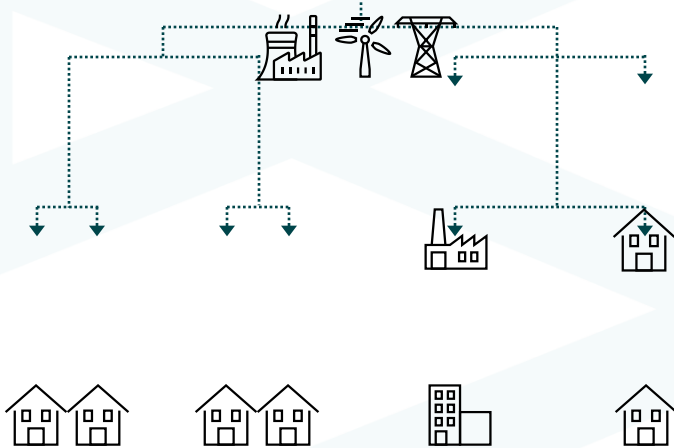
- Distributed / Centralised
- Variable
- Scheduled

Space constraints

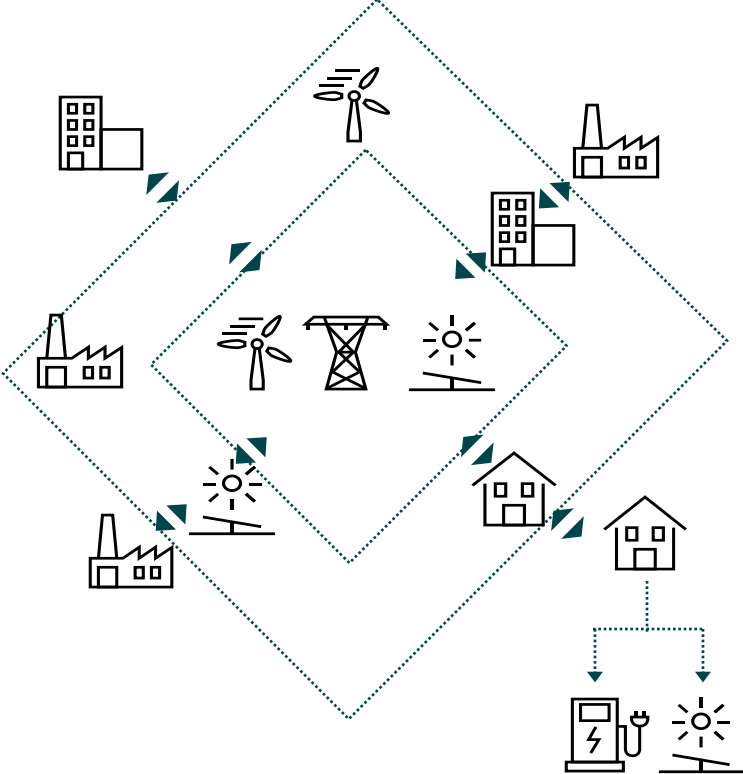
Seamless integration from grid to plug

New Energy Ecosystem

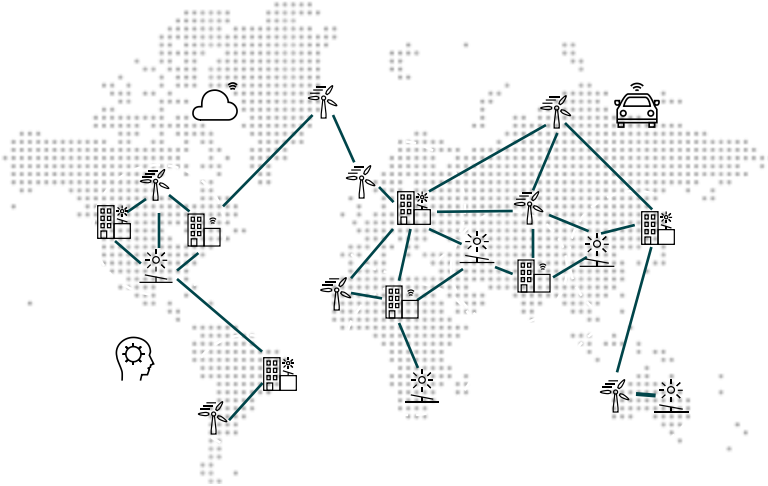
Yesterday



Today



Tomorrow



e-mobility, renewables, grid edge technologies and digitalization drive the evolution of future power systems

Coupling of the Energy and Mobility Sectors is Around the Corner

eMobility will need a lot of clean electricity

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“ eMobility is about the leading the **energy-mobility nexus**



500 TWh¹

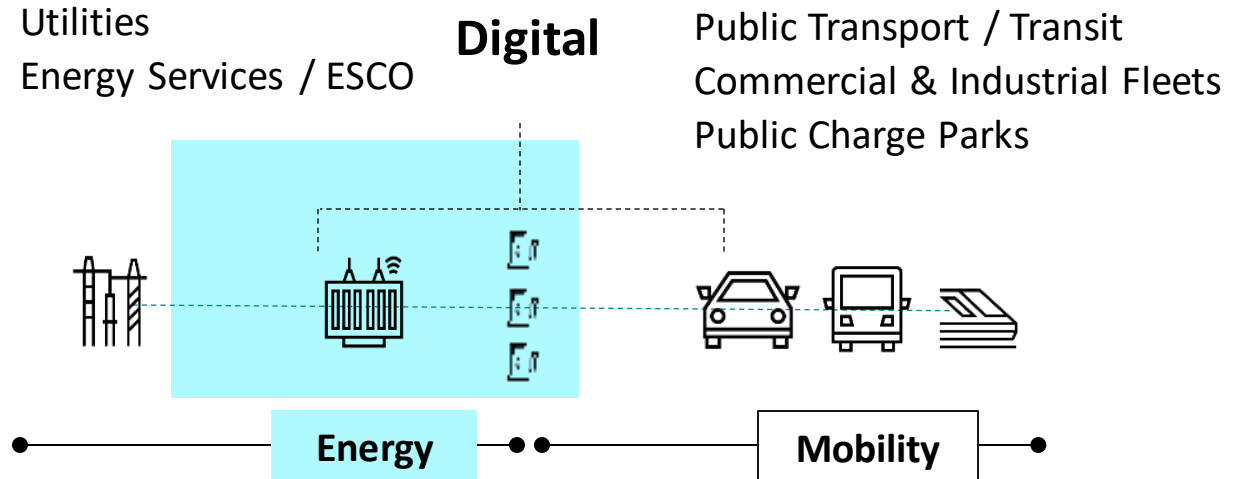
Yearly electricity needs to power all EVs by 2030



100 millions¹

EV (cars, buses, trucks, trains, etc.) in our roads and tracks by 2030

“ eMobility will **scale-up with the convergence** of mobility actors and energy systems experts



From the grid to the wheel

Bus Depot Electrification: Case Study

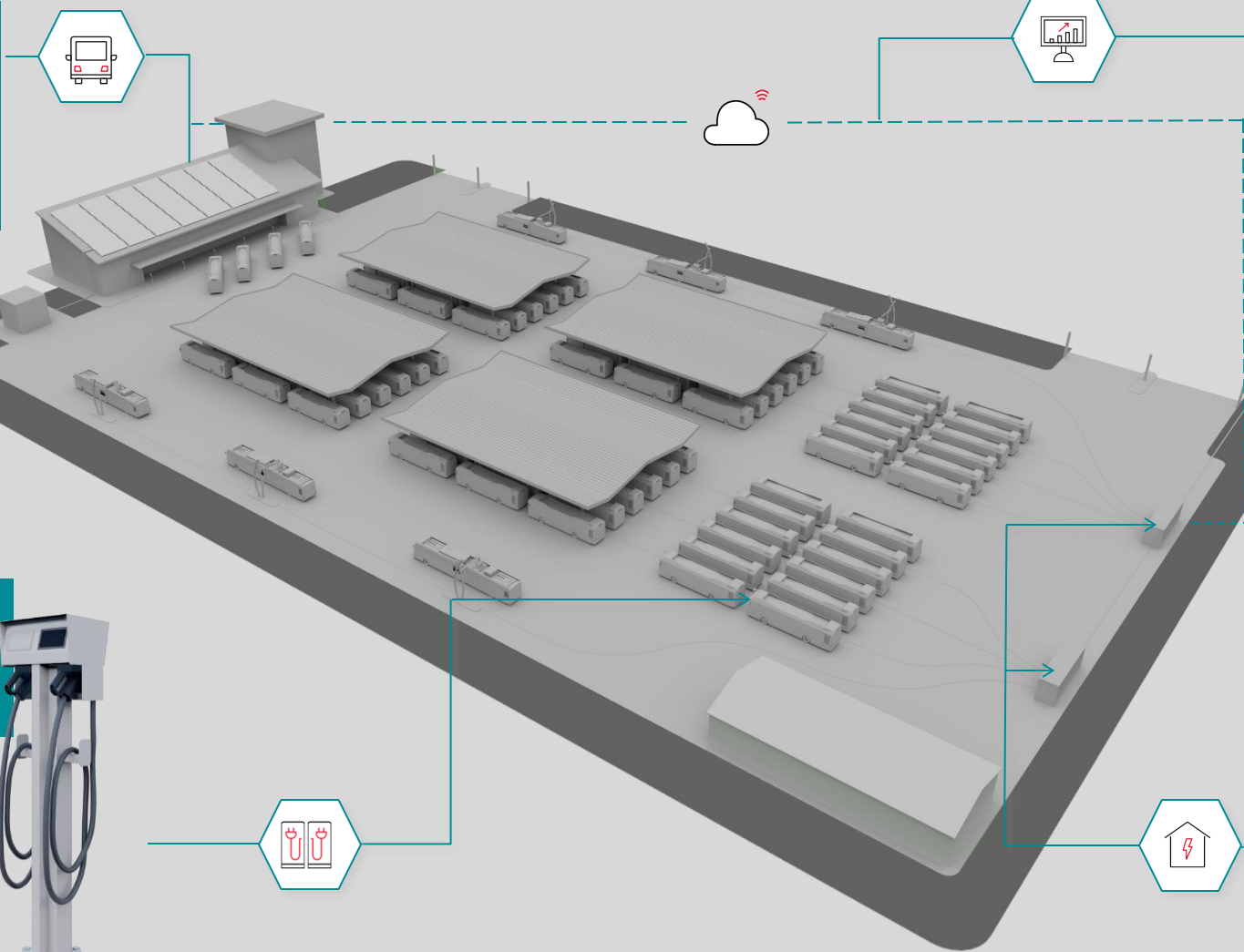
4MW depot charging infrastructure for 100 e-buses

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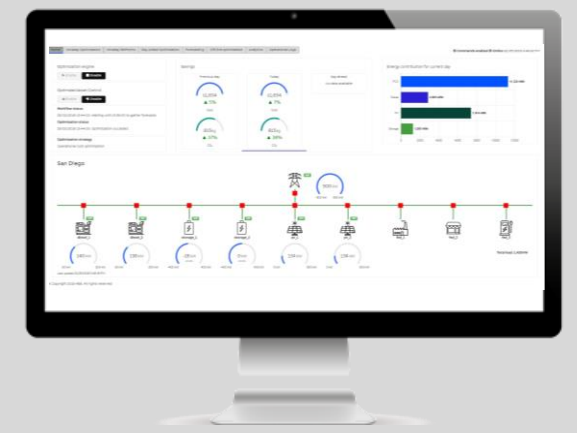
DIGITAL ENTERPRISE FLEET MANAGEMENT

- Vehicle Dispatch
- Traffic Control
- Infrastructure Management
- Maintenance



E-MESH™ DIGITAL PORTFOLIO

- SCADA
- RTU
- Energy Management System (EMS)



FIFTY CHARGING POINTS

- 2-plug charging points
- Sequential charging
- Touch-screen display



TWO 40ft CONTAINERS

- MV switchgear
- Two 2MVA rectifier transformers
- Two 1.75MW rectifier
- Ten cabinets with fifty 150kW chargers
- Auxiliary system

Smart Charging Solutions

Re-thinking the approach to fleet charging management

Accelerate electrification
and sustainability

Reduce risk and total cost of
ownership

Generate new revenue
streams



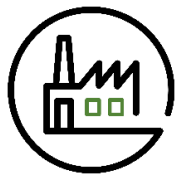
Commercial fleets



Buses



Heavy goods vehicles



Depots

Strategy



Gain a comprehensive roadmap to accelerate your electrification journey, from risk-reduction to new revenue opportunities.

Charge



Ensure your fleet is operationally ready by optimizing charging to maximize continuity and reduce cost and risk.

Battery



Access battery finance and asset management to optimize performance, maximize residual value and unlock new revenue streams.

Site



Generate and store your own zero carbon energy to achieve sustainability goals, reduce costs and exploit new revenue streams.

Partnerships Along the Value Chain Are Required to Develop e-Bus Fleet Electrification

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Cleaner, Greener Transportation is Transforming Cities Today

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Flash charging technology goes live in Geneva



Geneva's public transport, CH

Support with real-time data and valuable insights to optimize operations and enable predictive maintenance with **SCADA and Enterprise Asset Management software solution**



EBusway Nantes, France

Equip the first 24-metre fully electric buses running on the Busway Bus Rapid Transit route (L4) with the **Flash-charging technology and related infrastructure**



Brisbane Metro Bus, Australia

Introduce a new fleet of bi-articulated zero emission vehicles with **flash charging infrastructure for the 60 potential buses to be charged in 6 minutes at the end of the routes**

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