Envisioning the future of sustainable mobility

Digital Mobility Solutions Conference
Session 3: Smart Energy Management When Deploying Electric Buses
Full Grid-to-Plug Charging Infrastructure

#Connect #Charge #Optimize

Both loads and power sources are changing

**Generation**
- New energy sources
  - High variability
  - Low predictability
  - Local production
- Grid limitations
- Peak loads

**Load**
- New loads
  - Distributed / Centralised
  - Variable
  - Scheduled
- Space constraints

Connect safely, charge smartly

Seamless integration from grid to plug
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

eMobility is about the leading the energy-mobility nexus

500 TWh\(^1\)
Yearly electricity needs to power all EVs by 2030

100 millions\(^1\)
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

**DIGITAL ENTERPRISE FLEET MANAGEMENT**
- Vehicle Dispatch
- Traffic Control
- Infrastructure Management
- Maintenance

**FIFTY CHARGING POINTS**
- 2-plug charging points
- Sequential charging
- Touch-screen display

**E-MESH™ DIGITAL PORTFOLIO**
- SCADA
- RTU
- Energy Management System (EMS)

**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

E-mobility is about collaboration and new skills set

- Engineering companies
- Bus manufacturers
- Charging Infrastructure Suppliers
- Government Initiatives
- Battery Suppliers
- Financing companies
- Transport operators
Cleaner, Greener Transportation is Transforming Cities Today

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
Thierry Lassus
Senior Vice President – Sustainable Mobility
Head of Transport Segment

Hitachi Energy