

The Challenges and Opportunities of Fleet Electrification

Thursday 28th October 1:15pm – 2pm









Delivering London's Future Together



Today's Panel

Claire Thompson-Sage Sustainable Development Co-ordinator UPS

Speaker











Pantelis Stefas Assets and Technology Engineer UK Power Networks

Speaker

Sefinat Otaru Project Manager Cross River Partnership

Speaker

Chair

Rachael Aldridge Communications Project Manager Cross River Partnership

Dave Ebbrell Project Officer Cross River Partnership

Chat Moderator





Adam Cundy

Moixa

Speaker

Project Manager





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Today's Agenda

- 1. CRP Tackling Air Quality through Improved Logistics
- 2. UPS and Sustainability
- 3. Moixa GridShare and Fleet Electrification
- 4. UK Power Networks Services and EFLES











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Please pose your questions and thoughts throughout this session in the chat box to the right











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Tackling Air Quality through Improved Logistics, with a

focus on Electric Vehicles and Infrastructure

Sefinat Otaru

Cross River Partnership CROSS RIVER PARTNERSHIP

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O3 Partners

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Cross River Partnership is proud to be working collaboratively with all of these public, private and community partners across central London and beyond.

Angel London	13 Paddington Now	CRP Strategic		
Better Bankside	🙆 South Bank BID	Greater I on		
Brixton BID	🕫 Team London	Authority		
Cadogan	Bridge	Groundwor		
Camden Town Unlimited	16 The Fitzrovia Partnership	LondonLondon and		
Cheapside Business	🕡 The Northbank BID	Partners		
Alliance	18 Vauxhall One	Network Ra		
Eastern City Partnership	19 Victoria BID	 Port of Lone Authority 		
Euston Town BID	CRP Board Boroughs	 Transport for London 		
Hammersmith BID	Boroughs CRP			
Hatton Garden BID	works with			
Marble Arch BID	CRP Lead			
Central District Alliance	Accountable Body: Westminster City Council			
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Services



Clean Air Villages 4

Clean Air Villages 3

Healthy Streets Everyday

Clean Air Thames

Central London Sub-Regional Transport Partnership

Tow**n Cent**re Futures

EV Fleet-Centred Local Energy System (EFLES) Lighting London Sustainably

Ips







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Electric Vehicle Rapid Charging Hubs Guidance

ELECTRIC VEHICLE RAPID CHARGING HUBS

Guidance for Local Authorities and Landowners

October 2021



Includes

^{es} Charger hub locations and project demand across London

Planning and legislative context

Case study

Outline of how to implement a rapid charging hub







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EV and Logistics Timeline



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Image source: https://www.drivingelectric.com/your-questionsanswered/135/electric-van-charging-guide



Q&A Session



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UPS and Sustainability

Claire Thompson-Sage

UPS



Global Sustainability Goals - Environment

Environmental Sustainability

Achieve carbon neutrality by 2050

UPS is determined to continue our leadership in decarbonizing the transportation sector. Our roadmap includes both existing goals and new targets.

By 2035: By 2025: ₽ Æ 30% sustainable 50% reduction 100% renewable 40% alternative fuel 25% renewable electricity aviation fuel in CO, per global electricity in ground operations in facilities small package in facilities (2020 baseline)









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How we achieve this

- 100% renewable electricity in the UK since 2019
- Add to existing EV & hybrid fleet
- UPS invested in Arrival & commits to 10,000 vehicles: 30% for Europe 70% North America
- Prototypes deployed in London 2021
- Need to plan infrastructure to support 5 year roll out











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Q&A Session











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GridShare and Fleet Electrification

Adam Cundy

Moixa



Moixa Vision & Purpose

We believe that by increasing the IQ of batteries, Moixa can help build a future powered by renewables

Annual global temperatures from 1850-2017

Moixa – Adding Intelligence to Energy Storage

We leverage advanced technologies, AI and machine learning to help energy storage systems and electric vehicles adapt to household patterns and enable new services.











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GridShare Tools for large fleets



Live power flow across the fleet





Customer support functions



Device groups and maps







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Fleets need to electrify to achieve net zero targets

The challenges:

- Increased consumption
- Local grid connection limitation
- Costly reinforcement

Current solution:

- Site capacity and operational constraints
- Monitor consumption
- Schedule charging within constraints

The further opportunity:

- Optimising for cost
- Incorporating other DER
- Private wire public charging
- Unlocking Flexibility services revenue streams

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GridShare and EVSE Fleet Management

Optimising for Cost:

- Live site metering
- Site capacity limits
- Operational constraints
- State of Charge (SoC)
- ToUT price of electricity
- GridShare algorithm will predict load and determine the best charging plan to maximise savings within constraints











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GridShare and EVSE Fleet Management

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Incorporating Distributed Energy Resources (DERs) - Solar PV and ESS:

- Maximising self consumption
- Assisting in load shifting from high to low price points
- ESS Assisting in delivery for flexibility services
- Factored into GridShare algorithm to maximise savings

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Power

Networks

Services



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EVSE Fleet Management using GridShare

Private wire public charging:

- Depot use case: Spare day time capacity
- Maximise solar PV
- New, further restricted dynamic site limit factored into GridShare algorithm











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EVSE Fleet Management using GridShare

Unlocking flexibility revenue streams:

- Forecasted and flexible load profile
- Technical integration via cloud/API
- Enables participation in:
 - Local programs
 - e.g. UKPN constraint management
 - National programs
 - e.g. NG Balancing Mechanisms
- GridShare forecasting and bidding flexible capacity, optimising dispatches





UK Power Networks Services

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Q&A Session







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UK Power Networks Services and EFLES

Pantelis Stefas

UK Power Networks Services



Delivering end-to-end solutions through passion and commitment

We are experts in distributed energy solutions and power distribution. We optimise your existing assets, integrate new technologies to deliver improved performance and commercial benefits

We support our clients through the full lifecycle of delivery











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Powering the modern world through visionary expertise

Our clients include some of the highest profile public and private sector organisations with critical infrastructure in complex environments.

Industries



We have delivered for our clients for more than 50 years. Our portfolio includes:

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- Heathrow Airport
- Gatwick Airport
- Manchester Airport
- Stansted Airport
- London City Airport

- Luton Airport
- High Speed 1
- Network Rail
- London Underground
- Docklands Light Railway

Power Networks

Services

- EDF (Hinkley Point C)
- Ministry of Defence
- Port of Felixstowe
- UPS
 - Canary Wharf Group





We are experts in EV Infrastructure

We are uniquely placed to support fleets in their transition to electric vehicles

- We will **optimise your existing assets**, integrate the new EV charging infrastructure and deliver commercial benefits.
- We provide an **end-to-end integrated solution**, from initial feasibility studies through to design, build, and smart operation and maintenance on an ongoing basis.
- From EV charging infrastructure to software and hardware, we are **technology agnostic**, ensuring the equipment we use best meets your requirements.
- Should you require **finance** to turn your EV ambitions into reality, we can handle that too.



Optimised

Optimised grid connection,

future-proof on-site network

Active Network Management

Technology agnostic

and Smart Charging

Integrated



Energy storage and 2nd life batteries

Vehicle to grid Busbar technology Wireless charging

Bespoke







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Background: How the depot electrification began

Electrification of fleet started with installation of charge points and grid connection upgrade

- UPS wanted to operate their first 42 electric vans out of Camden Centre.
- UPS upgraded the electricity network and installed charge points.
- The network was capable of charging up to 63 vehicles with the existing set up.









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Background: The introduction of smart charging

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The second phase used a smart charging system to manage the grid connection capacity

- UPS aims to electrify the entire fleet at their Camden centre, 170 vehicles.
- A smart charging system was designed to avoid potentially costly and disruptive infrastructure and network connection upgrades.
- Smart charging is a standalone system that monitors site demand and controls EV fleet charging and onsite storage to stay below grid connection capacity.

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Power Networks



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EV Fleet-centred Local Energy System (EFLES)

Accelerate the rate of fleet electrification by capturing the opportunities for further cost savings and revenue generation.

Optimise the use of on-site assets, such as fleet charging, battery storage, on-site generation and spare connection capacity.

- Add value through **EV charging optimisation**.
- Explore opportunities to **share infrastructure** with publicly accessible charge points.

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Power

Networks

• Deliver **flexibility** to support the electricity network and earn revenues.



Outcomes

Commercial benefits to the fleet operator, support to local energy system, and increase availability of public rapid chargers



Optimised costs, savings, and revenues

Accelerate the electrification of commercial fleets



Support local and national electricity network by providing flexibility



Encourage wider EV take-up by improving access to rapid chargers



Reduce CO2 emissions and improve air quality









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The Future: A fully Integrated Depot

We believe there is huge potential for UPS and other fleet operators

- Roll out the approach to other sites and customers, maximising utilisation, savings and revenues and reducing costs.
- Implement EFLES in other applications such as charging hubs.
- Explore opportunities to add further value:
 - Alternative charging technologies such as robotic arm, pantograph, wireless, V2G.
 - Other **private wire** connections to neighbouring businesses and offsite generation.











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Q&A Session











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Sign up to our next event!





CRP Lunchtime Launch 11

Good Parks for London 2021: Parks and Climate Change

Thursday 18th November 2021, 1:15pm – 2pm









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Thank You!



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Search 'Cross River Partnership' on YouTube









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