

Use of the LU power network to charge EVs

Transport for London Eliptic Pillar C Demonstration.

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Electromobility in Europe: Linking EU research & innovation with local expertise & deployment 7 June 2017

Using the LU power network to charge EVs



- Context
- Environment & growth
- Mayor's priorities
- The LU power network
- Electrifying the TfL support fleet

Transport for London: managing an integrated system

- London Underground ('the Tube')
- London Overground, TfL Rail & future Elizabeth Line
- DLR
- Emirates Air Line
- Tramlink
- London Buses
- Taxis & Private Hire
- Santander Cycles
- River Services

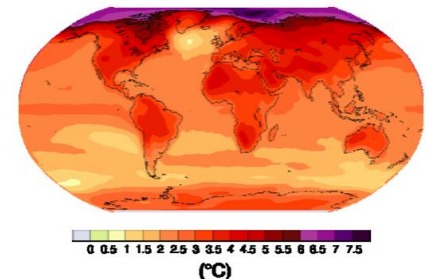
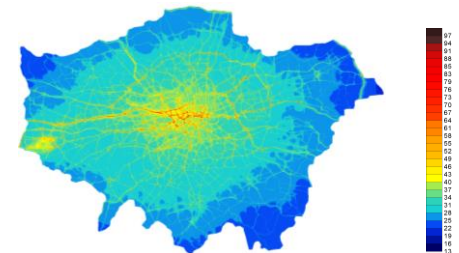
Transport in London

- More than 28 million transport trips each weekday across Greater London –
 - 6.5 million journeys on London's buses
 - 4 million on the Underground
 - 6 million on foot
 - 0.6 million by bicycle
 - 0.2 million by taxi
 - 11 million car / motorcycle trips



London's challenges: environment & quality of life

- Air quality – NO₂ (and PM₁₀ & PM_{2.5})
- Poor air quality is known to cause respiratory and cardiovascular conditions and is linked to around 9,400 premature deaths p.a. in London
- Road transport contributes 80% of PM and 63% of NO_x emissions in London



London's challenges: growth



- Population growth – transport capacity
- Congestion (space for more active travel)
- Road safety



- Reducing transport emissions depends on reducing vehicle use and encouraging EVs where road vehicles are needed



Mayor's transport priorities

- Proposals for cleaning London's air will achieve compliance with limits for NO₂ by 2025
- Further action will be required to allow London to become a zero-carbon city by 2050
- All new vehicles should be zero emission by 2040 in order to achieve the 2050 goal



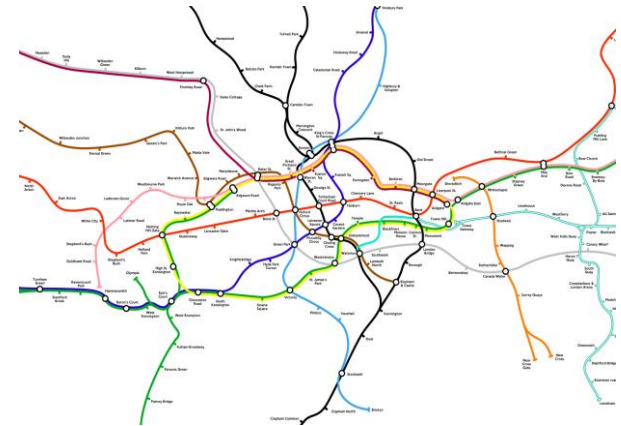
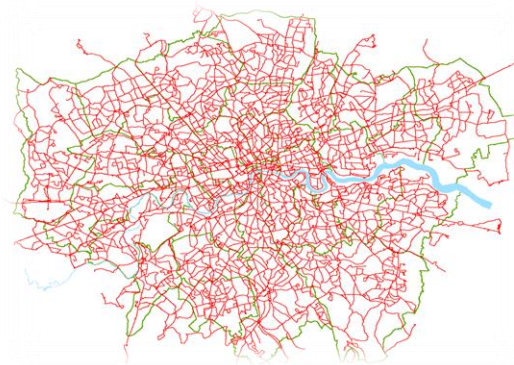
TfL and eLIPTIC: Use Cases



- Key aim: study of the London Underground energy system and it's potential to support EV charging
- Identifying potential locations for access to the power network to charge electric buses (Pillar A)



- Other plug-in vehicles (Pillar C)



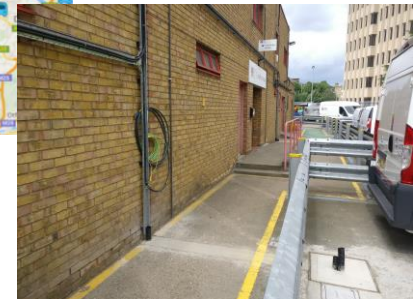
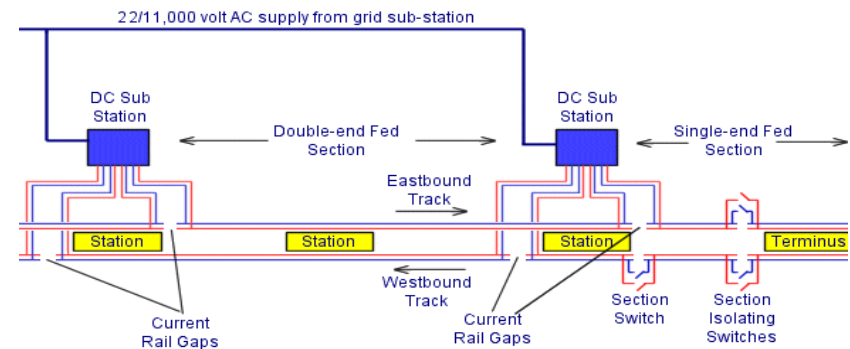
TfL and eLIPTIC Pillar C: strategic considerations –

- Trial or pilot connection to quantify impacts on LU network
- Opportunity to explore co-location of existing energy infrastructure with spatial demands for future multi-purpose charging networks



TfL and Eliptic: practical considerations –

- Spatial (co-) location
- Cost effectiveness
- Legal, regulatory & commercial issues
- Analysis of demand patterns and available capacity
- Suitability of vehicle usage patterns for conversion to plug-in vehicles



Thanks for listening. Any questions?

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