Location of Charging Infrastructure
The Issues for London

Andrew Luck – London Councils

CIVITAS Electromobility Workshop

Rotterdam 16/17 June 2016

London's Government

- Since 2000, London has operated under a two-tier system of local/regional government

- The Greater London Authority (GLA) has a strategic role and sets plans and vision for London

- The 32 boroughs and the City of London run many of the day-to-day services locally and set their own policies

London Boroughs

London Boroughs

- There are 1,851 borough councillors and four directly elected mayors

- 'All-out' elections are held every four years

- The most recent elections were in May 2014, following which:

  - o   Labour control 21 boroughs

  - o   Conservatives control 9 boroughs

  - o   Liberal Democrats control 1 borough

  - o   One borough has 'no overall control' (NOC)

LONDON
COUNCILS

Current political make-up
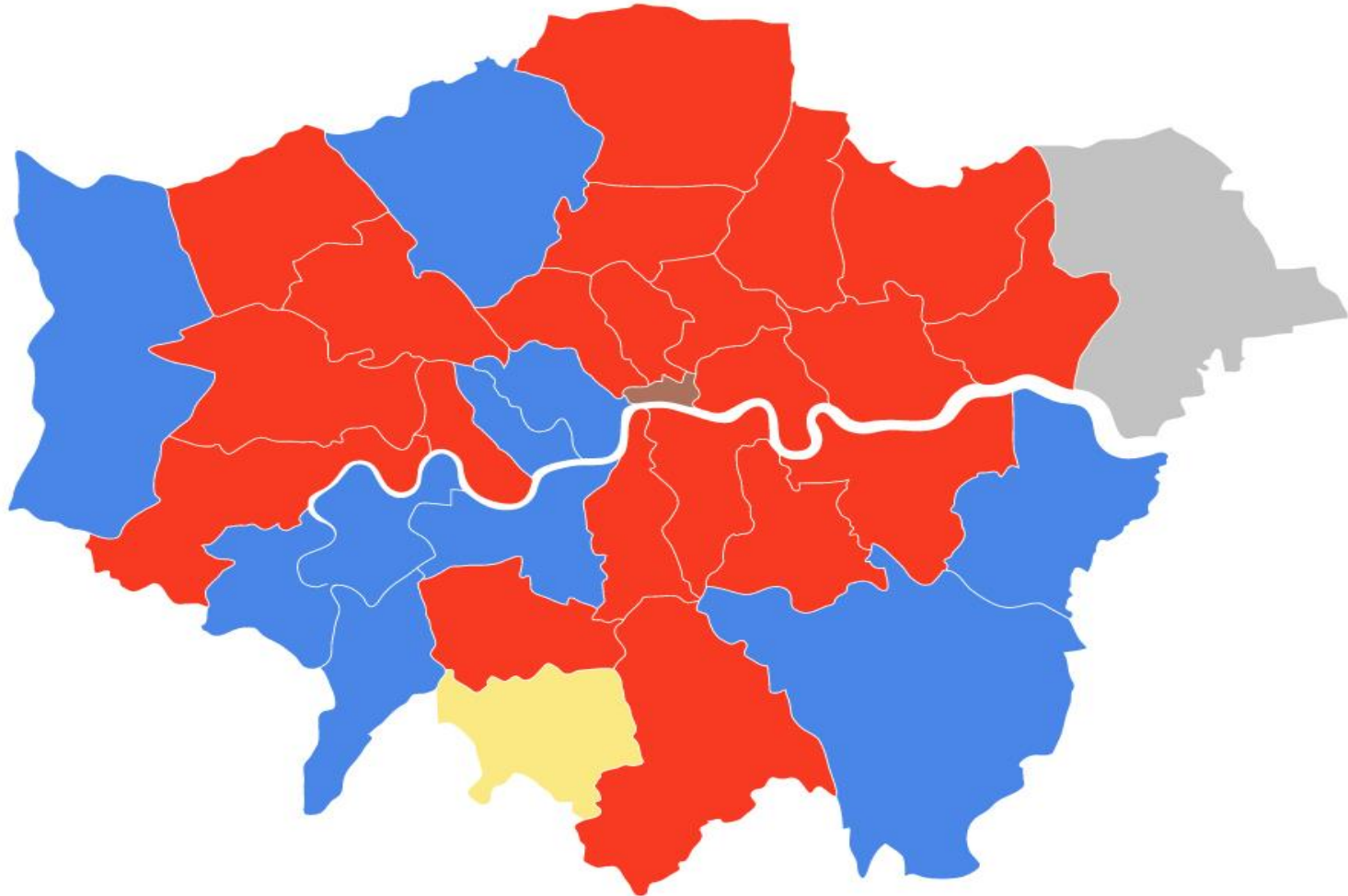
The GLA group

- The Mayor of London – executive role
- The Assembly – scrutiny role
- Three 'functional bodies':
  - Mayor's Office for Policing and Crime (MOPAC)
  - London Fire & Emergency Planning Authority (LFEPA)
  - Transport for London (TfL)

London Statistics

- London population 8.6 million
- Average of 268,750 in each borough
- Boroughs responsible for 95% of roads in London
- TfL responsible for 5% of roads which include the majority of arterial routes and the strategic network

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Problems in Governing London

- Large population
- Two tier system of regional/local gov't leads to a convoluted decision making process
- 33 areas with different priorities and political make up
- Financial pressures, reduced Central Government funding
- Different pressures in outer/inner London
- London Councils tries to manage this to help develop continuity in policy

London Commitment

- EV's key part of Mayor's sustainable transport strategy

- Increasing number of EV vehicles in London significantly to 100,000 by 2025

- Significantly increase charging infrastructure both on and off street – not easy.

- Boroughs slowly beginning to see the importance of EVs

Current Network

- ## Source London
  - Introduced by TfL in 2011, currently operated by BluepointLondon (BPL) since September 2014
  - Currently have 1,500 CP sockets across 27 boroughs, with 13 signing the variation agreement
  - CPs mostly 3 - 7kW
  - BPL responsible for maintenance/ replacement
  - Plan to expand network to 6000 CPs by 2018
  - Current network availability is 84% (up from 65%)
  - Separate membership and RFID card required but pay as you go is planned.

Current Network

- Initial plan was that Source would be <u>the</u> network in London

- Interest from commercial market, realised this would not be the case.

- Chargemaster

- PODpoint

- Electromotive

- Interest from many others such as Ubitricity (lamp columns) and Zaptec

What are the Issues in London?

- **Interoperability**
  - Many providers – we will need a joined up network
  - Has to be easy for customers to use
  - Near field technologies a preference over RFID cards

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Issues for London cont…

- **Lack of off street parking**
  - 83% population in some boroughs have no off street parking (especially in C. London)
  - Charging has to be shared on street
  - Existing high demand for on street parking
  - Political pressure from residents and businesses not to remove existing on street parking provision
  - Difficult sell to increase charging supply where public perceive a lack of demand.

13

Issues for London cont…

- **Lack of space for shared infrastructure**
  - Pavement width, too narrow in certain areas
  - Presence of basements
  - Potential negative impact on the streetscape and street clutter (especially in historic areas)
- **Cost of infrastructure**
  - Up to £8,000 for slow/fast charger
  - Up to £45,000 for rapid charge

Issues for London cont…

- **Complex needs of different charging users**
  - Rapids for commercial fleets (taxis, buses, delivery vehicles
  - Slow/fast for residents
  - Infrastructure needs to be close to high demand to stimulate further demand
  - Mix of on and off street where possible

Issues for London cont…

- **Electrical Distribution Network (grid)**
  - Some areas are already at near capacity (1.2% off at peak times)
  - Significant power needed for rapid chargers
  - Difficult to accurately monitor as heat maps show constantly evolving high demand
  - High cost of putting in additional infrastructure such as sub-stations
  - New sub-stations not reserved for charging
  - Need to work with providers.

Issues for London cont..

- **Awareness of EVs**
  - Need to raise public awareness of the whole concept of EVs
  - Increase in infrastructure will help do this
  - Development of the car club market is also important in publicising EVs and allowing drivers to use them

Car Clubs

- Strategy to increase car club membership to 1m by 2025 as this reduces car ownership and use

- Commitment - 50% of car club fleet to be ULEV by 2025

- Back to base easier as vehicle has its own dedicated bay and can use slower chargers

- Floating model more difficult as needs usage of the mix of interoperable public infrastructure

- London is working with car clubs to create infrastructure to maximise benefits of use.

Westminster City Council

- Westminster identified 150 possible sites for new back to base car club charging infrastructure

- Of these only 11 were deemed suitable for the following reasons:
  - Pavement width (3m minimum)
  - Presence of Basements
  - Grid related issues
  - Cabling requirements and presence of electrics

- This was before any resident consultation which could have seen further objections

Infrastructure Funding

- Successful OLEV funding bid means that London has additional £13m awarded for charging infrastructure

- Four specific aims:
  - Residential charging - 1,100 more shared charge points for residents
  - EV Car Clubs - more charging infrastructure
  - Rapid hubs - 300 by 2020 for commercial fleets (with private sector partner)
  - Eight new 'Neighbourhoods of the Future' local schemes showcasing and prioritsing EVs

Infrastructure location guidance

- Following detailed research, TfL will be publishing location guidance for EV charging in summer 2016
  - Working with SSE and UK Power networks to locate suitable sites
  - Identifying rapid charging sites for taxis and in bus garages.

Conclusions

- Important conclusion is that an increase in the type and technologies around charging infrastructure is vital for increased EV uptake and the benefits that this brings

- All cities will require a range of on and off street (residential, business and public) CPs

- Have to tackle the technological and political issues

- Difficult work, but we cannot shy away from it

- Need comprehensive network to realise our own ambitions and meet customer expectations

Thank You

Andrew Luck

Transport Manager
andrew.luck@londoncouncils.gov.uk