



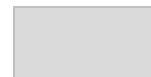
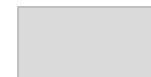
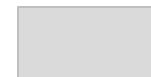
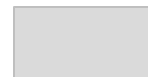
Towards e-mobility in London and the East of England

Steve Shaw, Graeme Evans with Antje Witting



Katie Pudney, Andy Summers, Hertfordshire County Council

Hamburg HAW, 6.10.2011

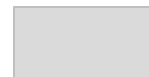
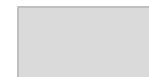
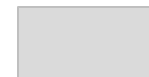
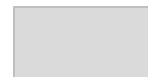


e-mobility UK



The UK Government (OLEV 2011) has given its strong commitment, through to 2015, to plug-in vehicles and supporting infrastructure; this includes:

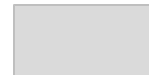
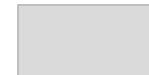
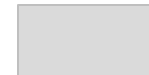
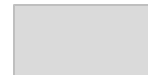
- > £300m for *Plug-in Car Grant* (25% up to £5k)
- Exemption from consumer and company car tax (VED)
- £30m for *Plugged-In Places*: match-funding 8 pilot projects to install and trial re-charging infrastructure



Making the Connection



Source: UK Government (June 2011) *Making the Connection*, p. 20



As UK Secretary of State for Transport made clear (OLEV June 2011: 5), this public investment and other intervention will be targeted to:

‘maximize the *environmental, economic and energy system* benefits of plug-in vehicles’.

Further guidance to Local Authorities (July 2011) in Draft *National Planning Framework*



e-mobility UK



However, successful adaptation will depend on *social and cultural acceptance* of plug-in vehicles; this is currently the subject of preliminary research in UK

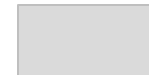
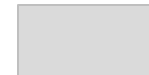
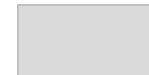
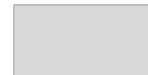
E.g. Technology Strategy Board's (2011) study of drivers of 'demonstrator' plug-in cars [in the nationwide Ultra Low Carbon Vehicle Demonstrator Programme]

Adaptation will also depend on continuing political commitment by all levels of *government and governance...*



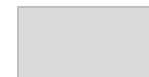
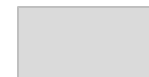
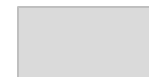
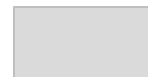
Reluctant individuals, firms and organizations?

- E.g. Drivers are deterred by **'range anxiety'** (although TSB study suggests this reduces); some by the prospect of leaving vehicle and walking to/from public charging points
- E.g. some reluctant to compromise **24/7 door-to-door** availability of their vehicle, while charging in public space
- E.g. some by **uncertain running costs-per-km/mile:** depreciation, battery replacement, servicing etc.



Reluctant or 'cautious' politicians?

- E.g. wary of the ***response of wider public*** to financial incentives/privileges to plug-in vehicle users: 'e-envy'?
- E.g. or by the ***response of plug-in vehicle users*** themselves if and when these inducements are removed
- E.g. ***unintended consequences***, e.g. if quieter vehicles endanger visually impaired people, others such as children



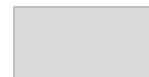
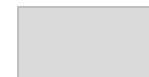
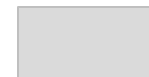
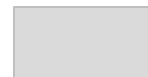
e-mobility UK



London, East of England, and North-East of England (NSR e-mobility) are 3 of our 8 *Plugged-In Places*; these were successful in their competitive bids for national funding

Led by various local **public/private sector consortia**, (OLEV 2011: 26) they are:

‘...creating a geographical focus for the **development of early market**’, and to offer ‘unique **insights** into how the national picture will develop’.

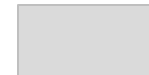
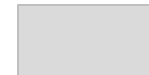
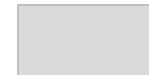
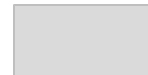


e-mobility London



The Mayor of London had already become a champion of e-mobility (GLA 2009), promising an **'extensive charging infrastructure** to facilitate use of *electric scooters, motorcycles, cars, vans/light trucks*'

Incentives for plug-in vehicle owners include ***exemption from central London Congestion Charge*** (worth up to £2,000/Euros 2,300 per annum)



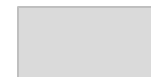
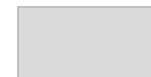
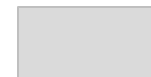
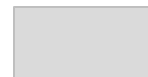
e-mobility London



Thus, the Mayor's support for plug-in vehicles is part of a broader strategy to de-carbonize transport, and address poor air quality in Greater London, especially to:



- Encourage Londoners to walk more, cycle, and use public transport
- Encourage a switch to cleaner, greener vehicles



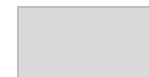
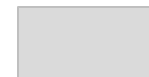
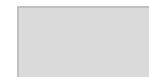
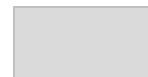
e-mobility London



The provision of ***publically-accessible and on-street charging points*** will also be critical:



Since only 33% Londoners can park their cars *off-street*, infrastructure 'will be provided to support EV owners without off-street parking as well as those driving longer distances'...



25,000 charging points by 2015



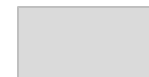
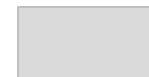
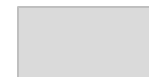
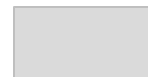
e-mobility London



Adaptation to e-mobility by **firms/organizations** with fleets of cars/vans will, of course, be independent of the Mayor, but critical to his implementation strategy

‘Electric 10’: companies that work with Mayor ‘to share experience and encourage adaptation...by other businesses’ (GLA, 2009: 50)

Includes retailers *Tesco*, Marks and Spencer, Sainsbury’s; express parcels *TNT*, DHL, UPS; also *Royal Mail* etc



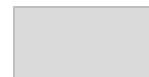
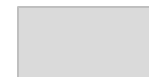
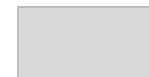
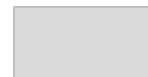
e-mobility London



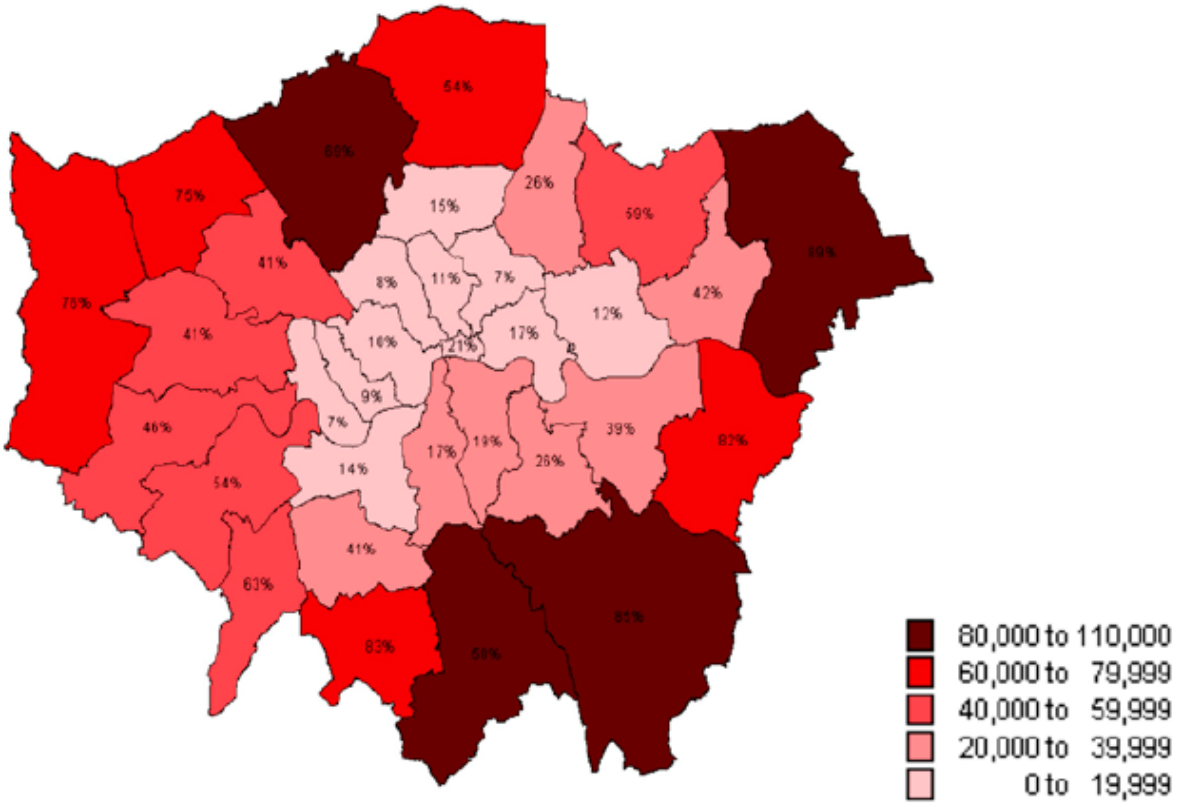
Adaptation to e-mobility by **households** will also be critical, but presents particular challenges in London

Whereas nationally 'norm' is to charge cars overnight at home, this is **impossible for 2/3 London homes**; furthermore off-street parking is **unevenly distributed geographically**

Where then should charging points be located...?



Households with off-street parking across London (the labels show the percentage of households in each Borough with off-street parking)



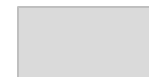
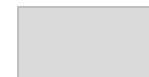
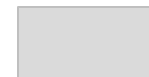
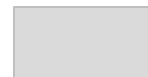
e-mobility London



Some 90% (22,500) points will be in **workplace car parks**; lower-spec where vehicles are ‘typically parked for seven or more hours in a relatively secure location’

The other 10% (2,500) will be **publicly-accessible** locations, with 8% (2,000) in car parks, especially:

1. Retailers’ customer car parks
2. Station car parks of Underground and Train Operating Companies; however capacity is limited, also with an uneven distribution...



Location of London Underground station car parks



e-mobility NSR



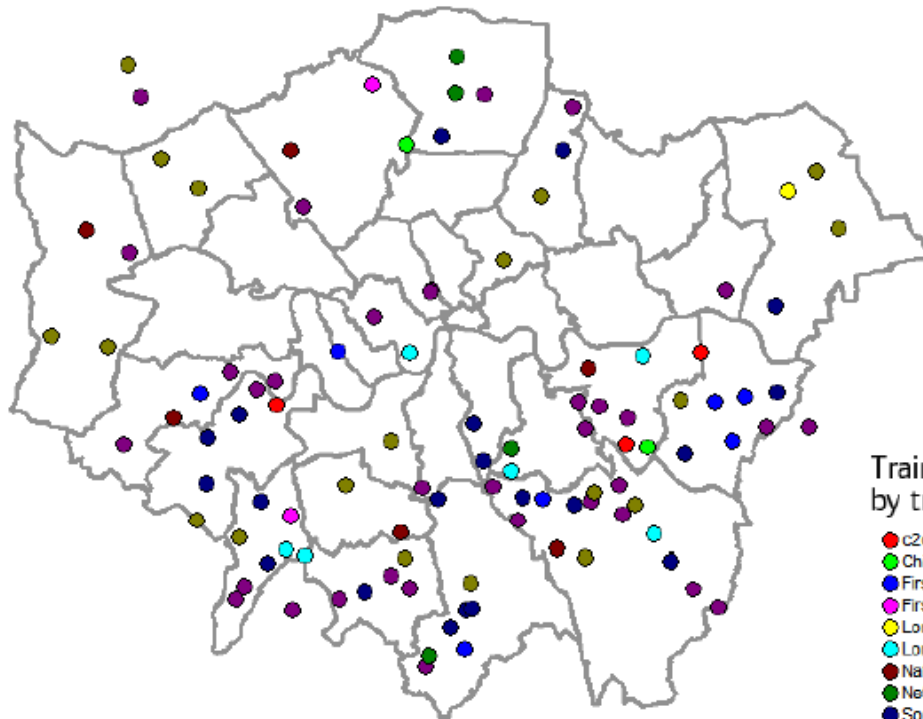
- Phase I London Underground car parks
- Other London Underground car parks



Locations of train station car parks

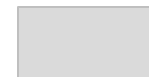
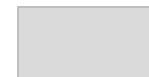
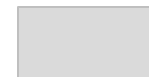
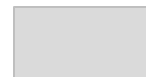


e-mobility NSR



Train station car parks in London by train operating company

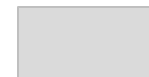
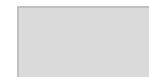
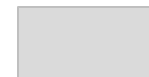
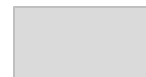
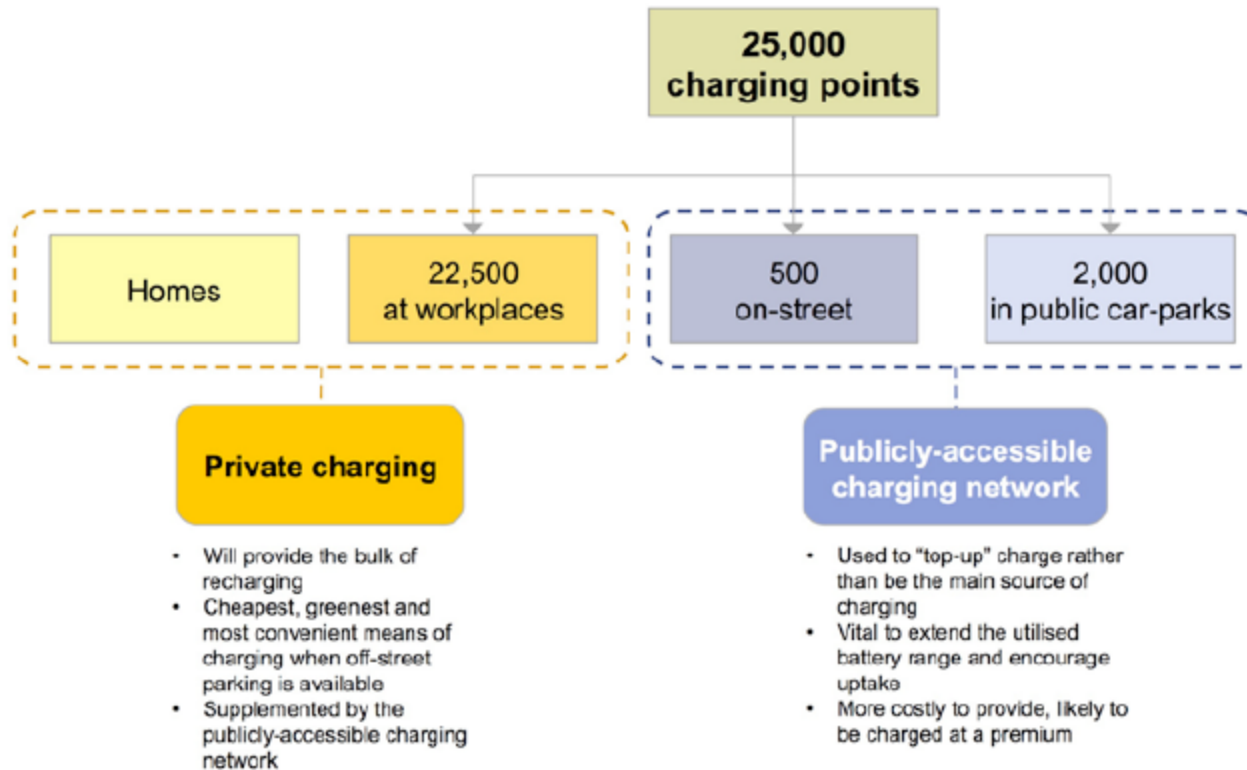
- c2c
- Chiltern Railways
- First Capital Connect
- First Great Western
- London & Continental
- London Overground
- National Express East Anglia
- Network Rail
- South West Trains
- Southeastern
- Southern



Likely split of EV charging points across London in 2015



e-mobility NSR



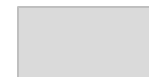
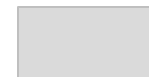
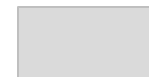
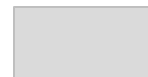
e-mobility London



The Mayor confirms that **Rapid charging points (RCPs)** (ibid: 21) will be attractive for drivers undertaking *longer trips* and for *taxis, commercial vehicles etc.*

Need to locate these at motorway service to **facilitate inter-city EV journeys**

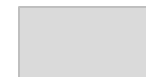
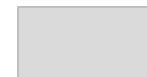
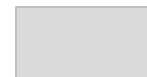
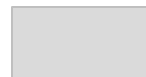
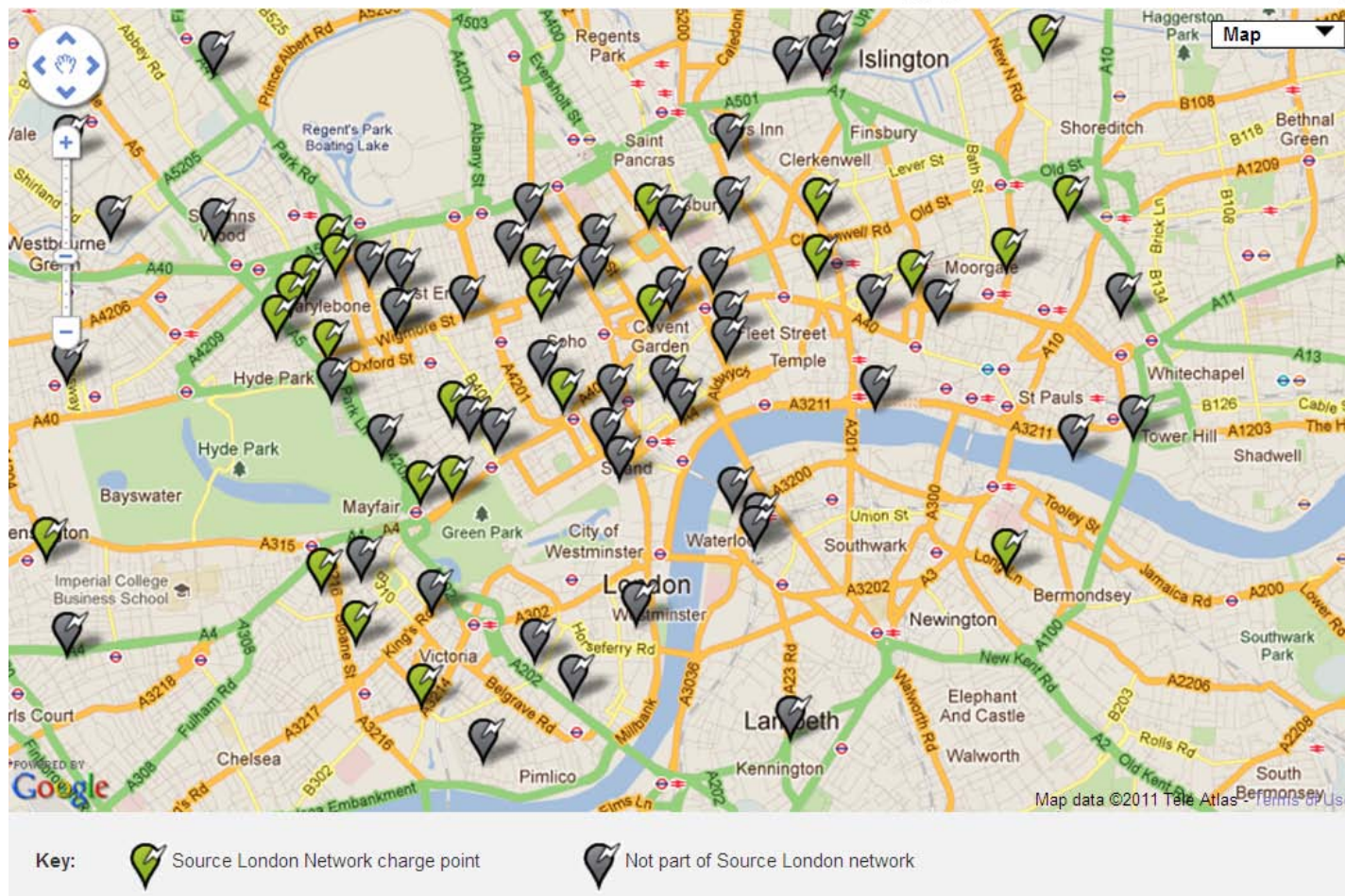
The remaining 2% (500) of Mayor's publicly accessible points will be **on-street in dedicated parking bays...**



Current Charging Points in Central London



e-mobility NSR



e-mobility London

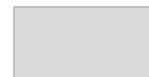
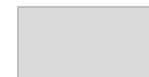
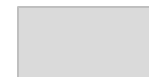
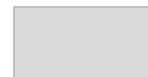


Equitable coverage?

Aim is that ‘every Londoner will be **no more than one mile** from the nearest EV charging point by 2015’ (ibid: 24)

Intention is to balance this equitable distribution with targeted provision in the ‘**EV hot points**’: installing points where uptake and utilization is likely to be highest

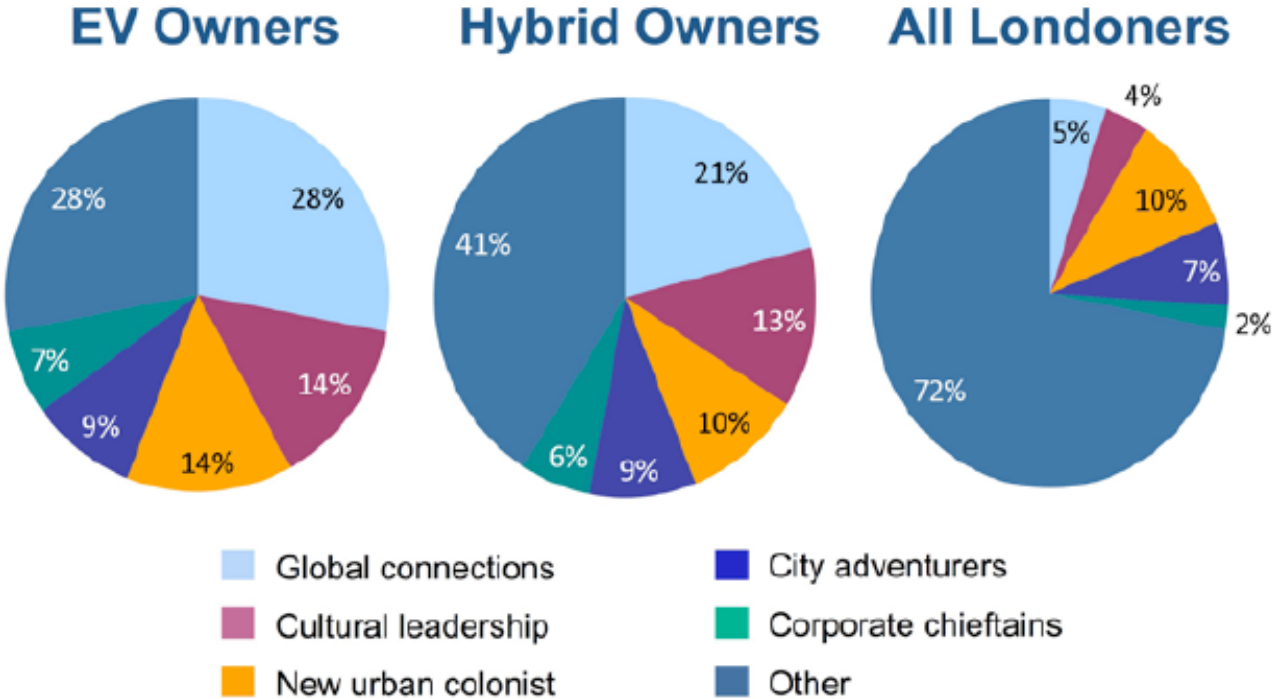
Targeted where clusters of ‘**early adapters**’ in a crescent central/NW/SW London...



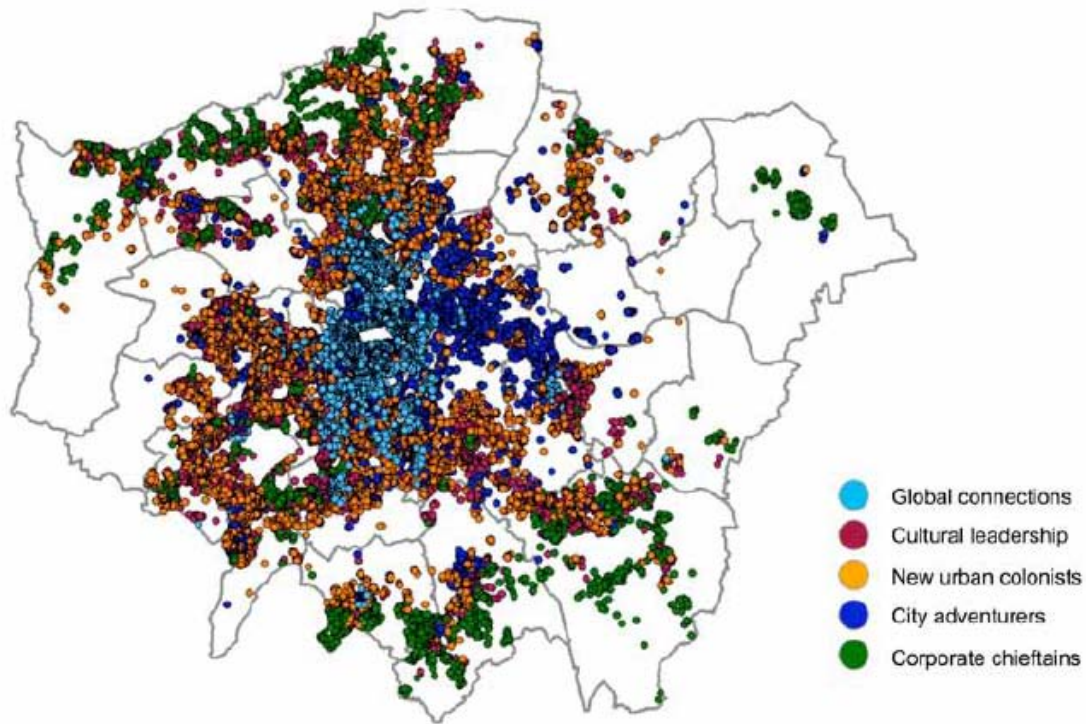
Mosaic type analysis of EV and Hybrid owners, and all Londoners



E.g. 'Global connections' target group = 'affluent middle-aged singles living in central London'



Where the 5 Mosaic target types live



EVs registered for alternative fuel discount



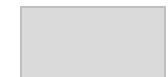
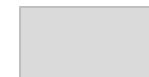
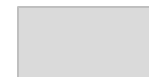
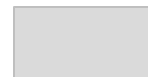
e-mobility NSR

There is a band across London, from the north to the south west, where electric vehicles are more popular.

This can in part be explained by current policies. Camden and Westminster, for example, have implemented free or discounted parking schemes and installed a large number of charging points already. However, the attitude of people living in these areas is of equal importance.



Cars
■ 4 and over
■ 1 to 3
None



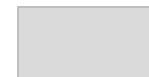
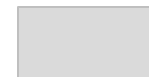
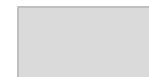
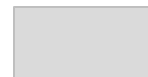
Our approach



As in other projects, our research team will work with **key 'stakeholders' to monitor adaptation to e-mobility** in our 'study areas' over next three years and beyond

To track progress from **good intentions of public policy to outcomes** = what actually happens at **street level**

Then review critically: **what works well, what is transferable, lessons learned from problems and challenges** that will inevitable emerge



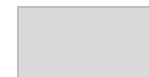
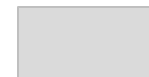
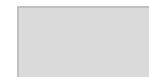
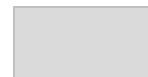
Our approach



In this case, we want to track developments, **compare progress** with e-mobility partners, reviewing implications for **longer distance travel across North Sea Region**

We shall also **drill down in scale**: EU/NSR, national, regional/local down to streets and urban spaces: real-world test-beds

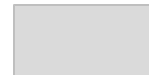
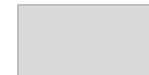
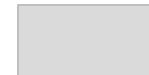
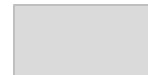
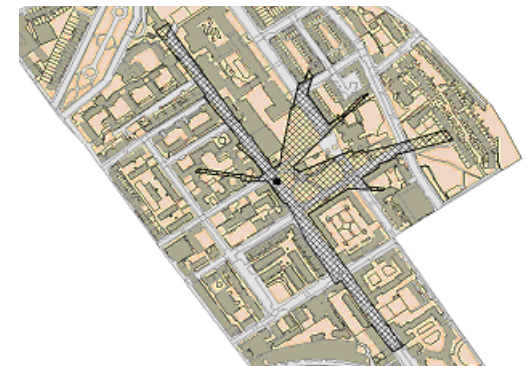
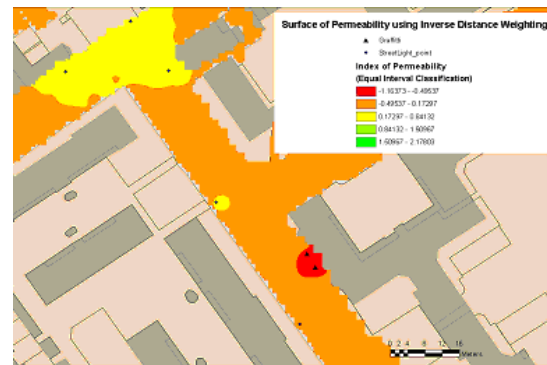
E.g. Street audits to ascertain how accessible, safe and welcoming public charging points will be for local users...



Street Audits.



Street Audits address psychological and physical factors that inhibit access to transport, enabling transport users, practitioners and decision-makers to identify **potential barriers** and develop workable solutions



Principles to practice

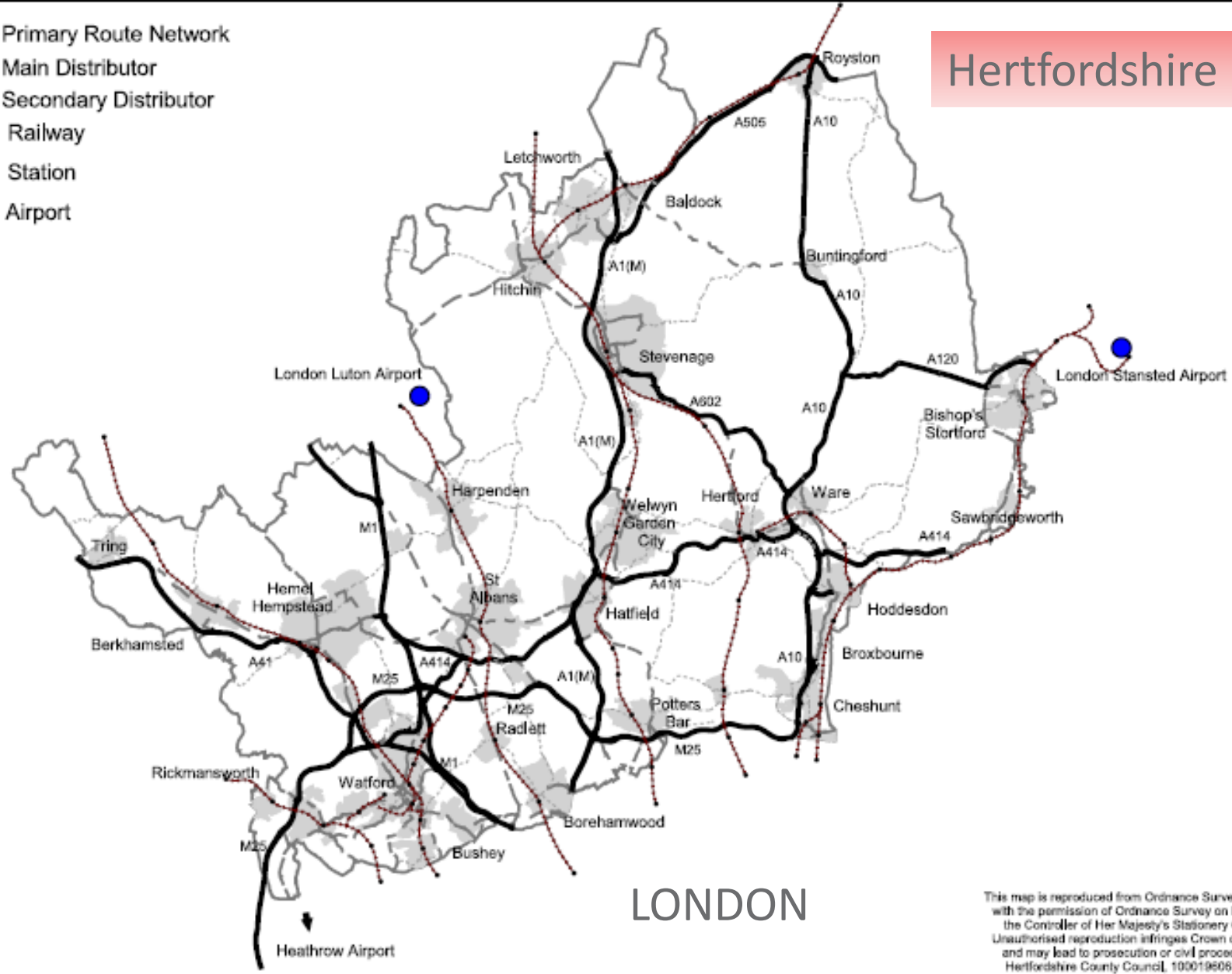


To illustrate some of the challenges for practitioners and decision-makers, I should like to invite our e-mobility partners from the East of England to review progress in **Hertfordshire County Council** so far...



Hertfordshire

- Primary Route Network
- - - Main Distributor
- · - · Secondary Distributor
- +++++ Railway
- Station
- Airport



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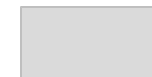
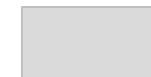
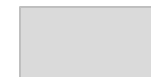
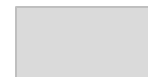
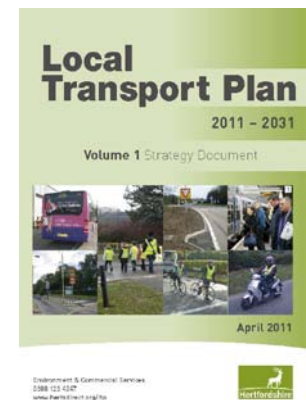
e-mobility Hertfordshire



e-mobility NSR

Hertfordshire Local Transport Plan 3 (2011-2031) Policy 3.9:

“The county council will support the provision of infrastructure and facilities to enable and encourage the use of electric and electric hybrid vehicles.”



UK Government Policy e-mobility NSR

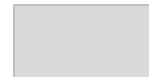
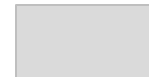
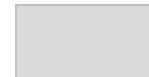
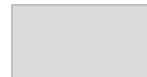
- Making the Connection: the Plug-In Vehicle Infrastructure Strategy (June 2011)

Aims to support:

- Decarbonisation of transport system
- UK technology and manufacturing industries

- Specifies need for 3 types of charging in LA's:

- Home charging (preferred approach)
- Work-place charging
- Public place charging



UK Government Policy



e-mobility NSR

- Draft National Planning Policy Framework (July 2011):

Location and design of developments, where practical to:

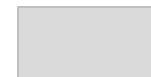
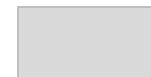
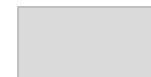
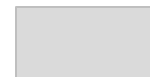
“incorporate facilities for charging electric and other low emission vehicles”

Development standards should take into account:

“an overall need to reduce the use of high-emissions vehicles”



Draft National Planning Policy Framework: Consultation



e-mobility Hertfordshire



e-mobility NSR

- Evalu8

- £3 million funding from Plugged-in-Places
- 50% match-funding of 600 charging point across the East of England
- 105 proposed charging points allocated across Hertfordshire and Luton
- 4 fully funded posts awarded to HCC
- Further posts installed and intended through various stakeholders and Evalu8

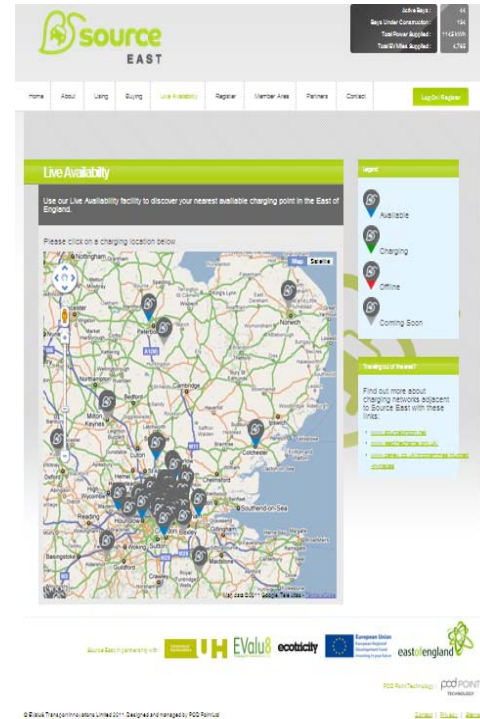
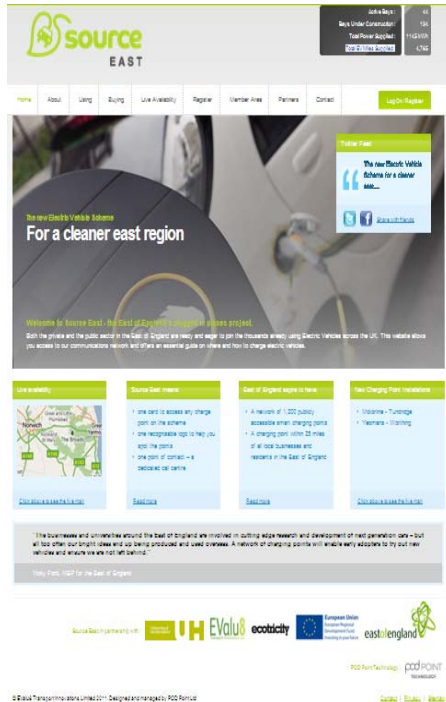


Evalu8





e-mobility NSR



Live Availability can be seen on the website www.sourceeast.net
For further information please visit: www.evalu8-ti.org.uk



European Union



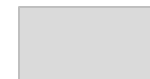
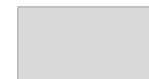
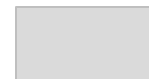
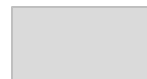
The European Regional Development Fund



e-mobility Hertfordshire e-mobility NSR

Development Opportunities

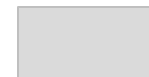
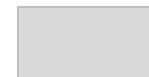
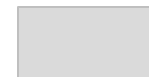
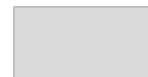
- *“A Low Carbon Economy for Hertfordshire” (2009)* recommendations:
 - Explore potential for Hertfordshire low carbon technology cluster and related support package
 - Create sustainable transport and communications infrastructure
- *“The East of England Low Carbon Cluster Innovation Study (2009)”*
 - Over 18% of UK’s market value in East of England
 - Hertfordshire ideally located to capitalise



Key Challenges



- Standardisation of charging points and supporting system for the users
- Rationale for charging point location
 - Lessons to be learned
- Stakeholder and wider public support



Key outcomes



We have one overriding requirement for this project:

To identify the impacts of electric vehicle infrastructure that are of most interest to local authority decision-makers:

- Financial costs and benefits
- Risk levels
- Political acceptability
- Contribution to statutory obligations (e.g. air quality etc)



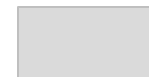
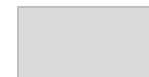
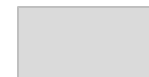
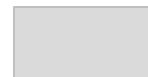
To summarize



Through collaboration research team/partners, we shall review developments from the **vision** to what actually **materializes**, taking account of national/ local context

Help partners **exchange good practice** within NSR; discuss the **emerging issues**; consider **how problems can be overcome**, and how **synergies can be exploited**

And invite you warmly to participate in the **e-mobility NSR event in London 2013**

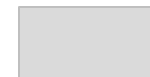
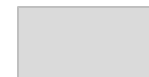
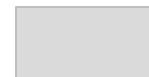
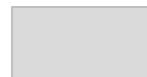


Showcase Event



1 Day Showcase Event in London 2014:

- Promote EVs and supporting infrastructure
- Disseminate findings to date
- Platform for regional Plug-In consortia
- Keynotes - TfL/GLA (Mayor), Herts CC/East of England
- Showcase for Source London, Vehicle manufacturers
- Case studies: transport Interchanges, e.g. King's Cross and Regional hubs, e.g. SW London, Hertfordshire





Vielen Dank Thank you

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