



A Smart Grid for London

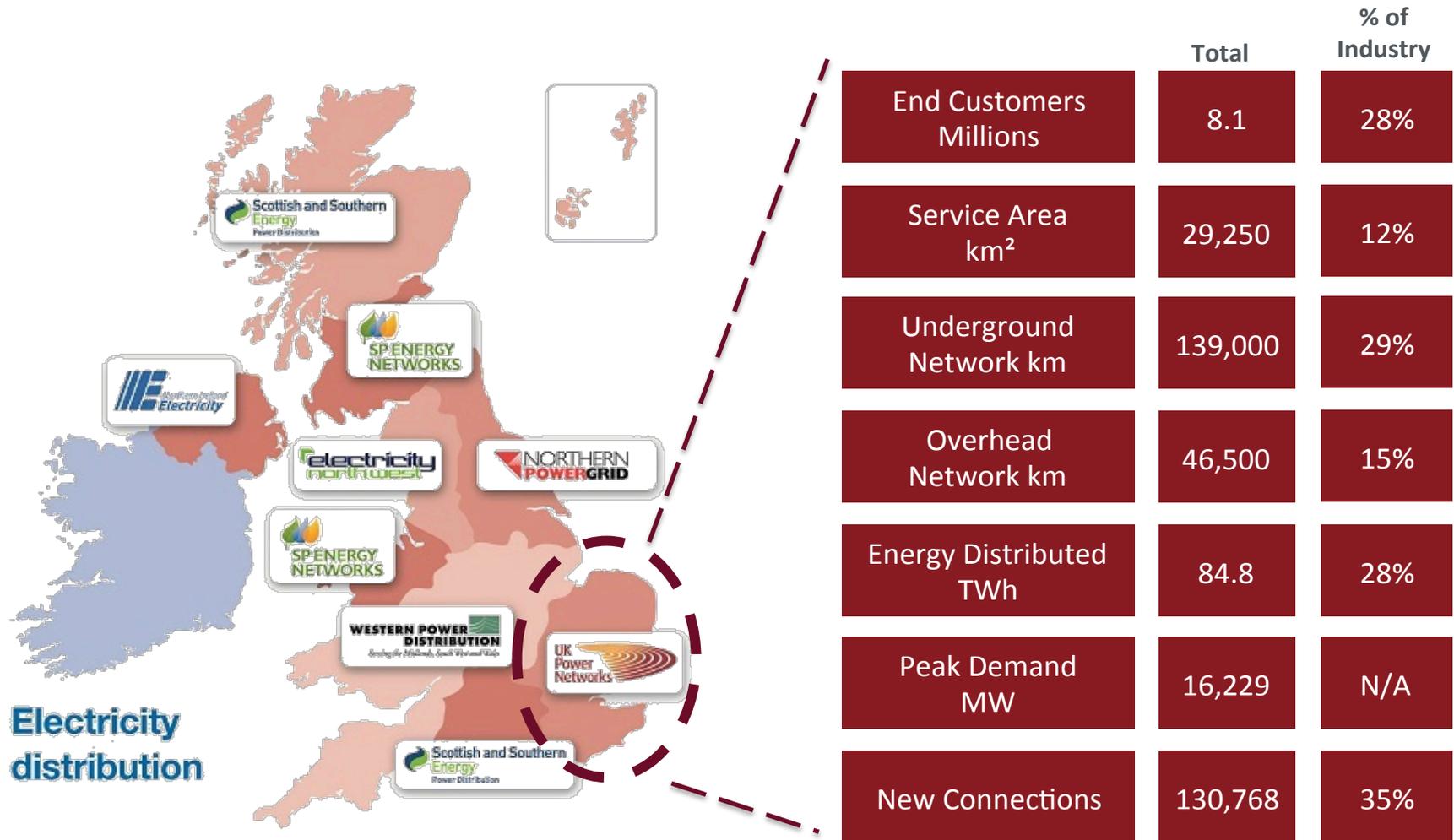
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6th Smart Grids & Cleanpower Conference
3-4 June 2014, Cambridge, UK

www.hvm-uk.com



UK Power Networks



One of the largest electricity distributors in the UK

The Low Carbon Transition...

2010 (and for several decades before)	2020
Passive or 'dumb' distribution network	Semi-Smart Grid
Customers with 'dumb' devices	Customers with Smart Meters and smart appliances
Demand customers only	Significant contribution from Distributed Generation (DG)
Gas or electric home heating and conventional vehicles	Disruptive electrification of transport and heat

What this could mean for UK Power Networks

- By 2020:
 - We will be supporting as many new connections of EV charge posts annually as we do bus-shelters and lamp posts today
 - have seen PV added at the domestic level to up to 15% of our maximum demand
- By 2023, 1 in 25 of our ‘customers’ will be an EV charge post!
- Regulator has shown clear direction towards ‘Smart’
- We want to serve customers better
- Low Carbon London is the idea platform to prepare for this future

Low Carbon London

A learning journey



Learning how to create a low carbon city

Low Carbon London

To understand how electricity **network design**, their **operation** and the associated **commercial arrangements** will need change to enable the adoption of **low carbon technologies** into people's homes and upstream of the transformers

Technologies

- Distributed Generation
- Heat Pumps and Electric Vehicles
- Demand Side Management
- Wind Twinning
- Smart meters and ToU tariffs



For more information on Low Carbon London, go to:

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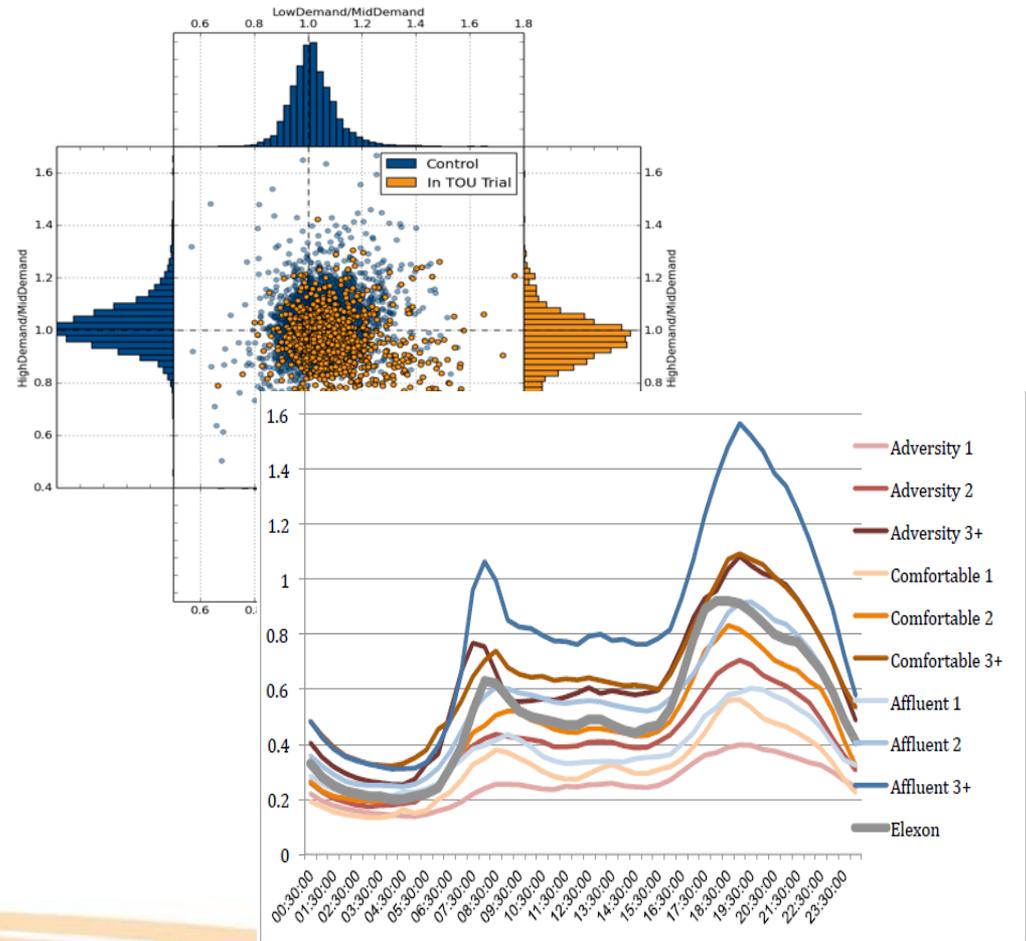
Low Carbon London – Project insights

Smart metering:

- Largest residential profile assessment **in a generation**
- New planning assessment criteria

Dynamic Time of Use tariff:

- Unique trial of d ToU in UK
- Shared-service with DNOs and suppliers
- Detailed social analyses of engagement strategies and dependencies for response
- Significant response to price signals



Low Carbon London – Project insights

Electrification of Heat and Transport:

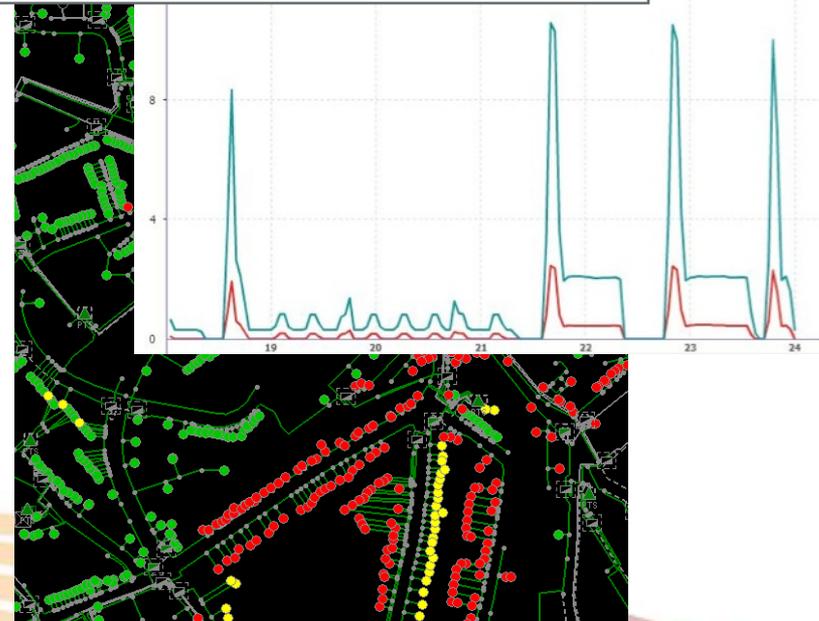
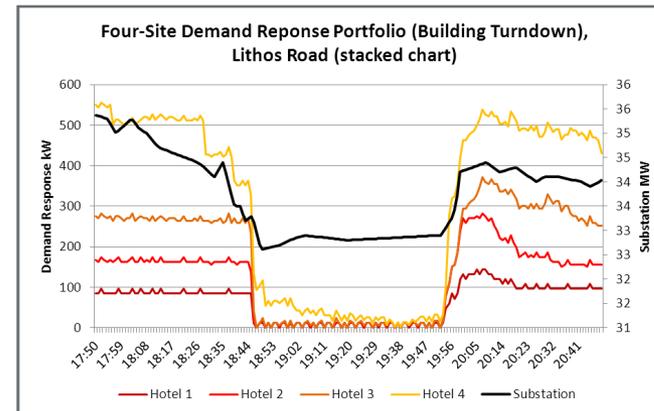
- Large scale monitoring assessing impact of future loads
- First of a kind, dynamically controlled EV charging network based on network peaks

Demand Side Response

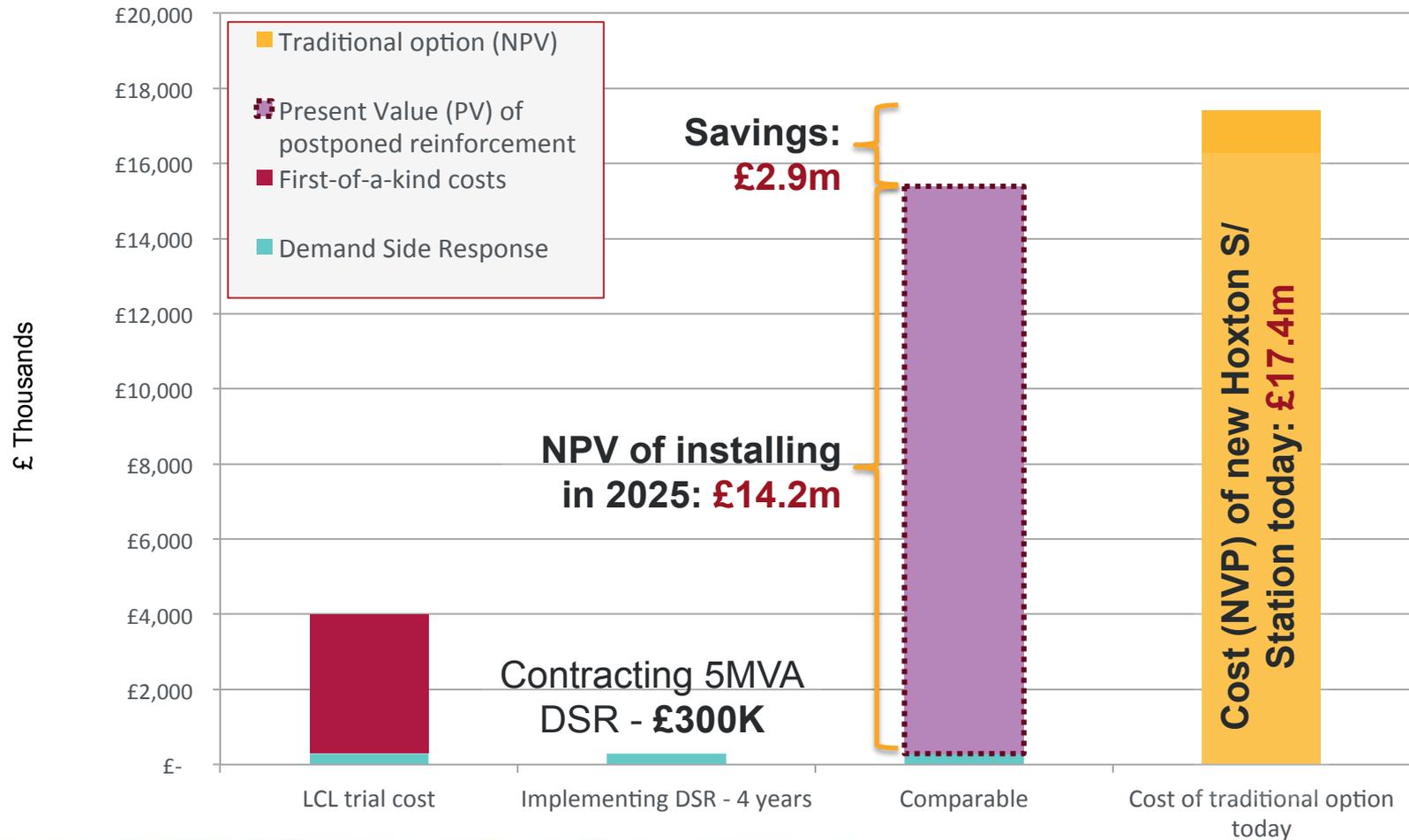
- 17MW under contract and >300MWh network support
- £44m savings in RIIO-ED1

Network visibility:

- Highest ever resolution look at the network
- Detailed LV performance data with state-estimation assessment



Whiston Road/Hoxton deferment example





Thank You



UK Power Networks Innovation Portfolio

For more information about all our projects:

- Visit our new website ukpowernetworks.co.uk/innovation
- Direct contact michael.clark@ukpowernetworks.co.uk
- Sign up for our newsletter

