



# Demand Side Response – From Trial to Reality

Low Carbon London

Michael Clark – Programme Director



**UTILITY OF  
THE YEAR**



# Presentation overview

- The vision of Low Carbon London

- Cost benefit – best for customers?
- Commercial Arrangements
- Carbon Impact

- What we have committed to in the RIIO ED1 Plan

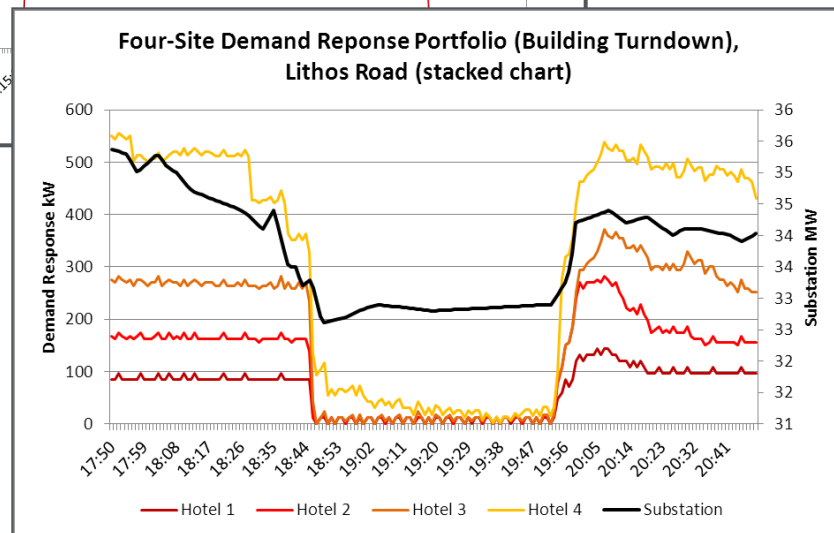
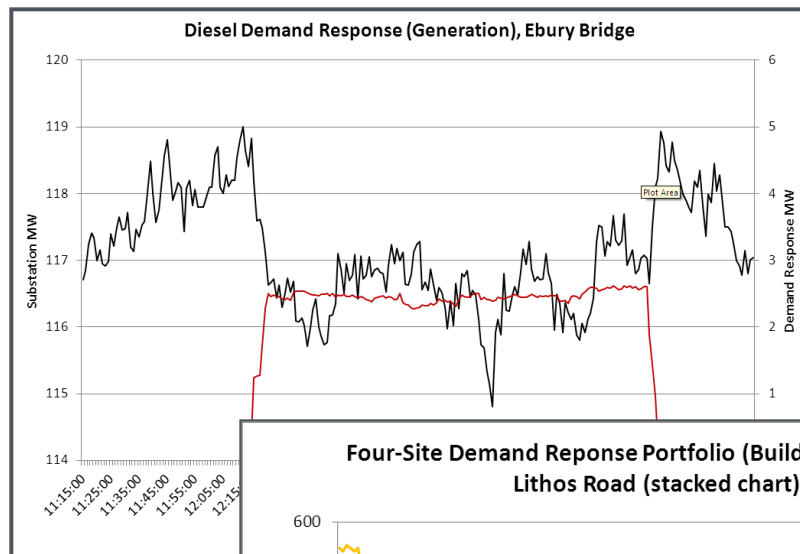
TRIAL



REALITY

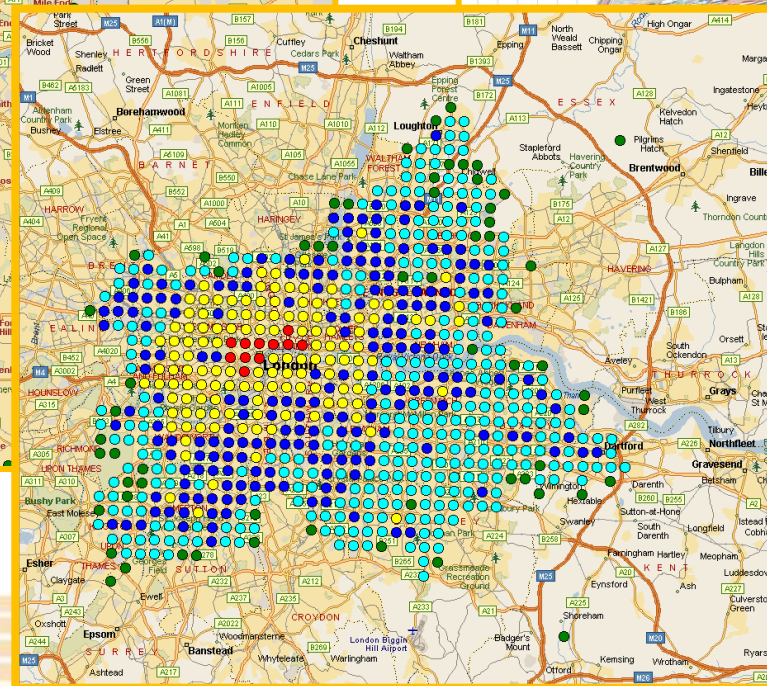
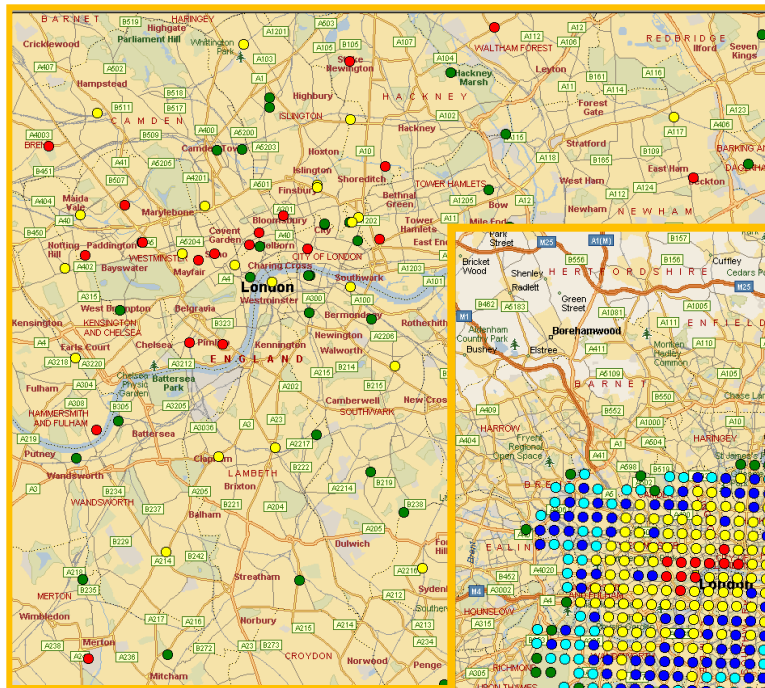
# Does DSR work?

- Confidence
  - Trial success
  - STOR et al
  - Aggregators
- Geo-constraints
- Value

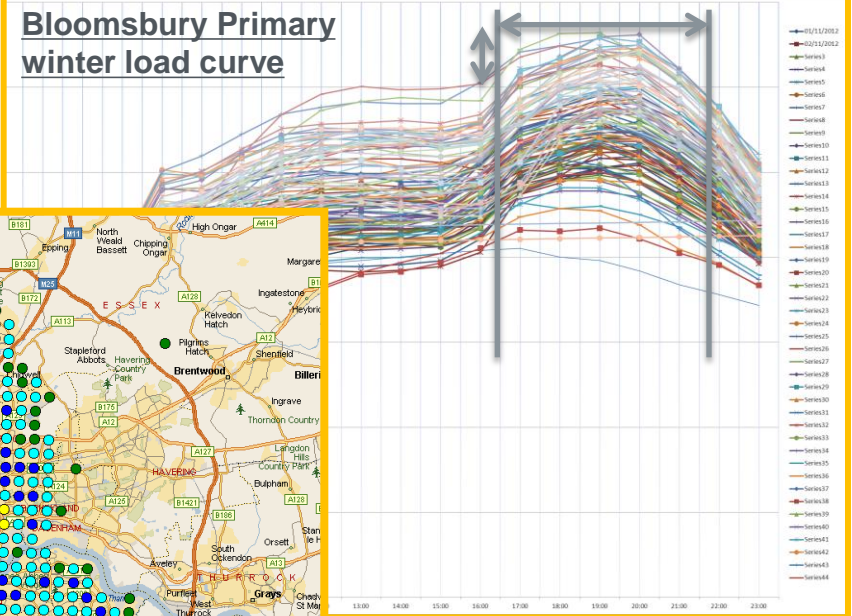


# Joining the dots

- Load heat maps and MSS analysis
- Outage planning and fault analysis

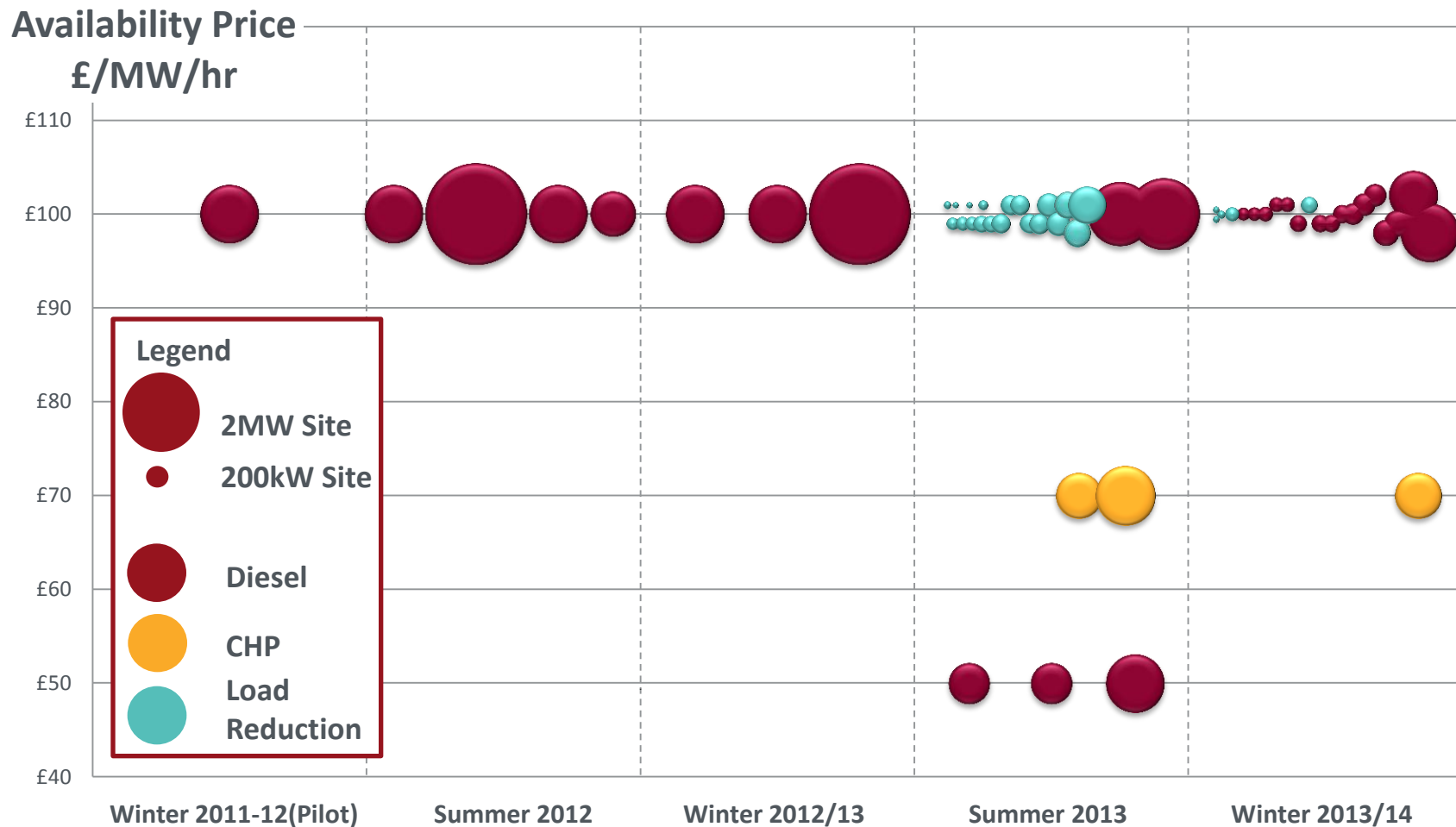


**Bloomsbury Primary  
winter load curve**



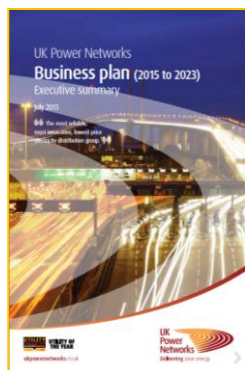


# Demand Side Response Trial History



# Demand Side Response – Business Case

Smart Grid solution UKPN RIIO-ED1	£m
Saving from DSR schemes	38.2
<b>Total Smart Grid savings</b>	<b>135</b>



Defer substation upgrades	#	£m
EPN	0	0
LPN	1	12.8
SPN	3	14.3
<b>TOTAL</b>	<b>4</b>	<b>27.1</b>

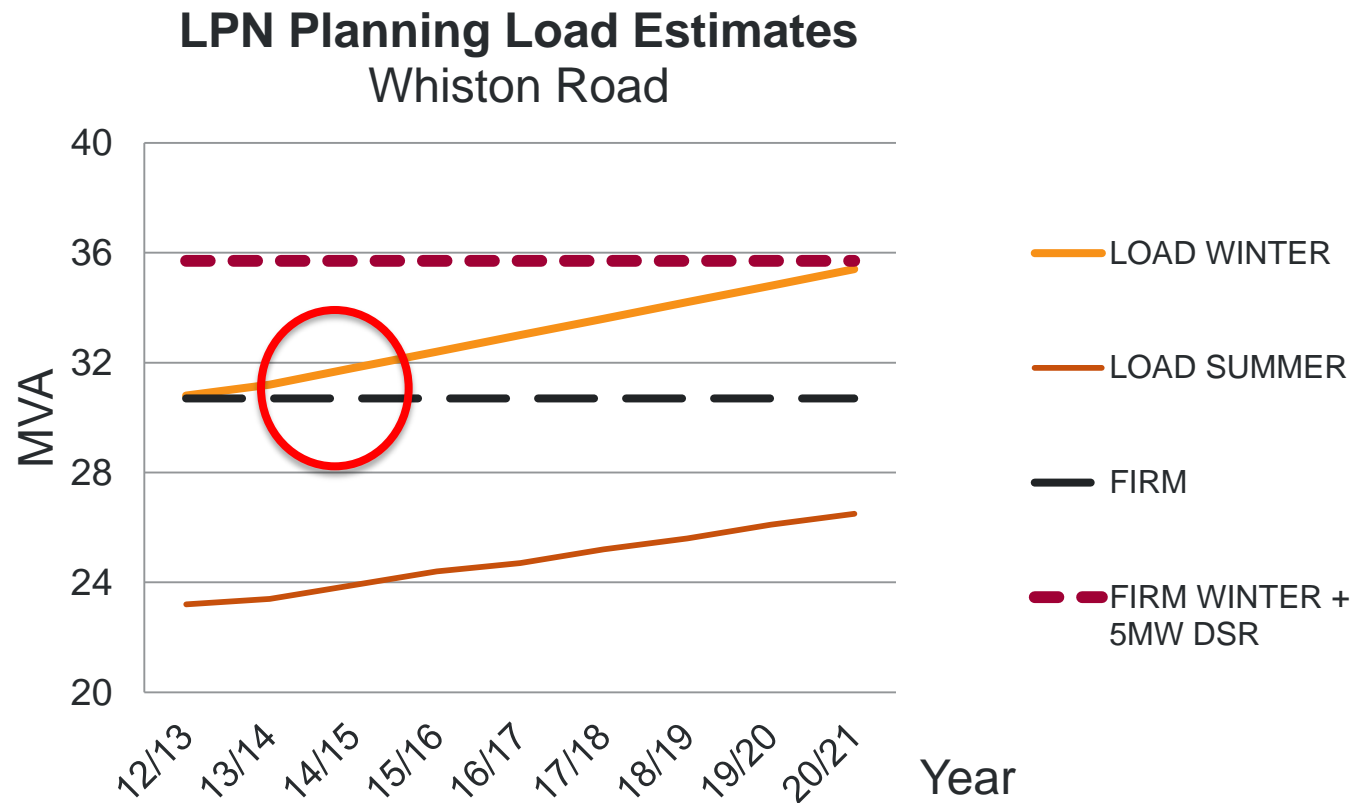
## APPROACHES:

- ✓ Defer substation upgrades
- ✓ Defer new-build substations
- ✓ Manage transfer capacity lost during construction
- ✓ Manage construction interdependencies to avoid derogations
- ✓ Manage impact of economic growth

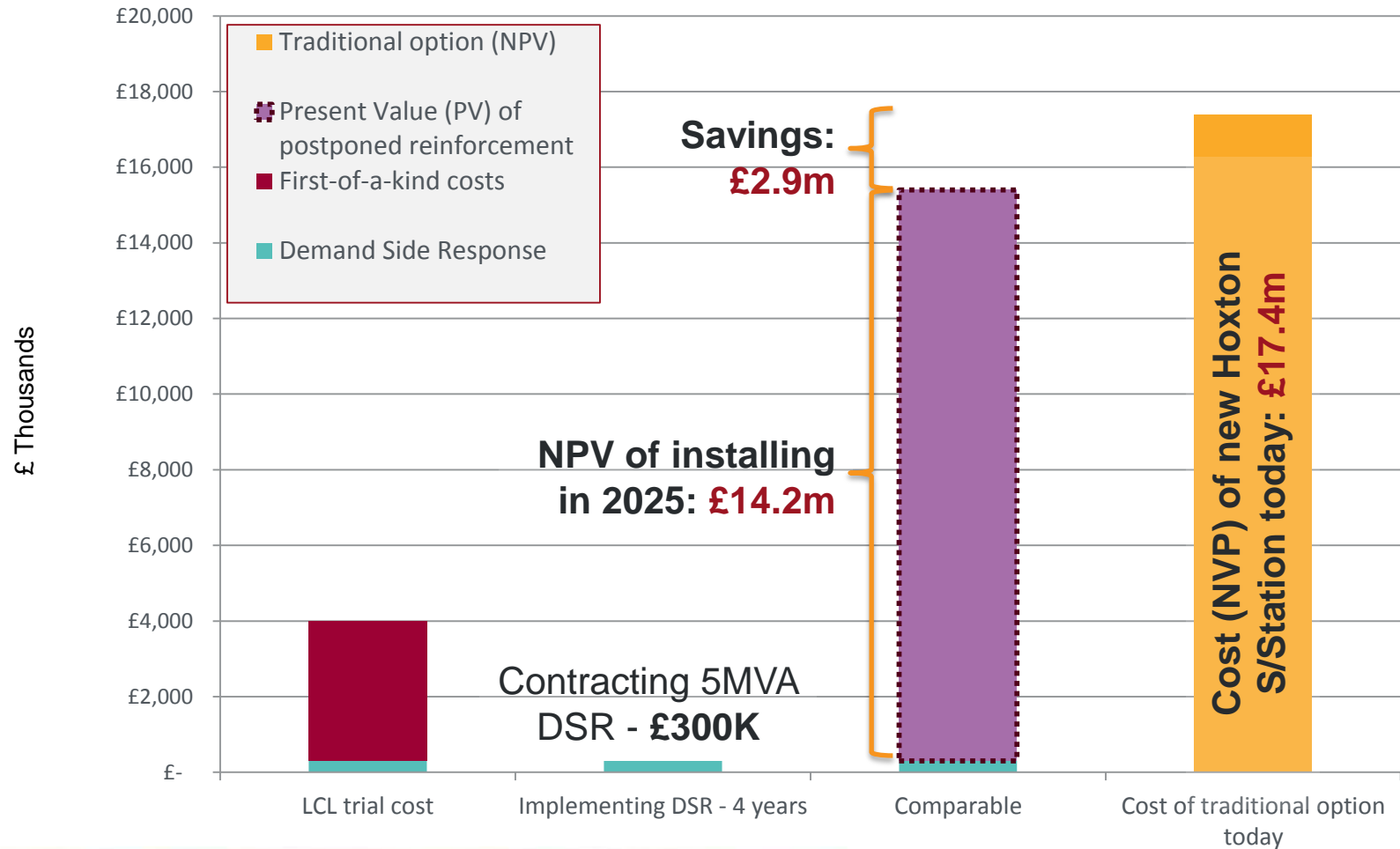
# Whiston Road – 11 kV substation

## Load estimates inform potential for DSR

Upgrade needed to accommodate the load growth in the area.

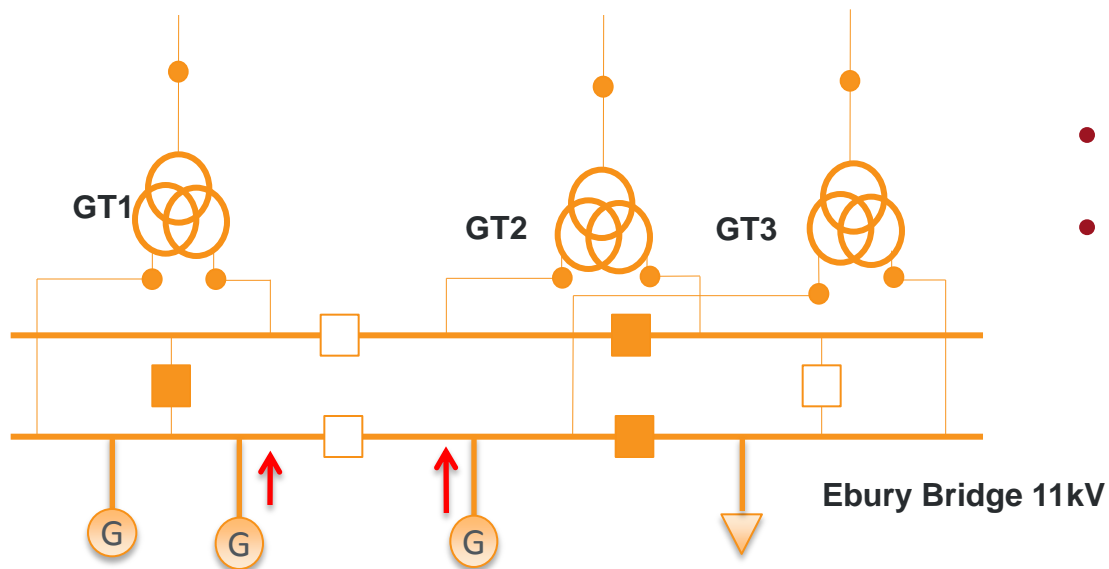


# Whiston Road & Hoxton new build deferment





# Ebury Bridge



- Out of firm in summer
- Derogation in place

LPN Planning Load Estimates **Ebury Bridge**

	FIRM	ACTUAL	12/13	13/14	14/15	15/16	16/17	17/18	18/19	19/20
WINTER	152.6	137.2	132.4	133.5	99.1	100.8	102.3	88.8	90.5	92.3
SUMMER	125.0	130.4	130.4	131.5	97.8	99.5	100.9	87.9	89.6	91.3

# Ebury Bridge

- LCL has **2MW of DSR** already under contract and has been cited as a mitigation to the derogation

LPN Planning Load Estimates **Ebury Bridge**

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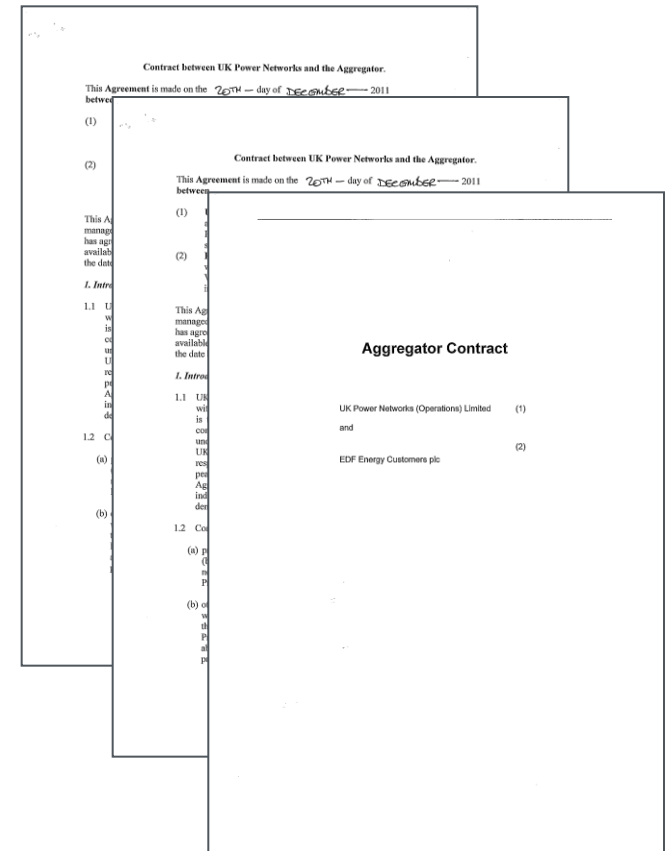


SITE REINFORCED

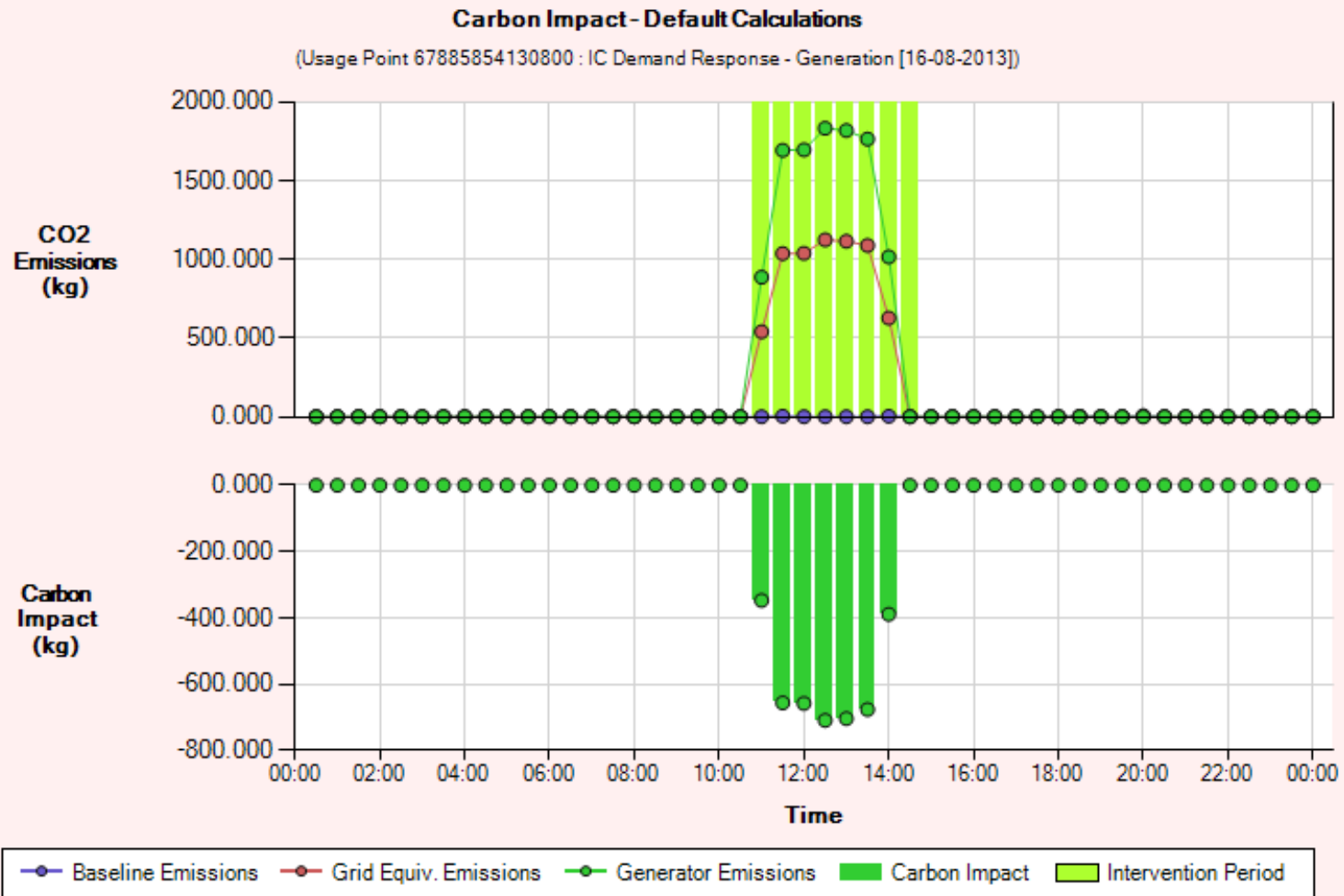
# Commercial Arrangements

## The basis for the document

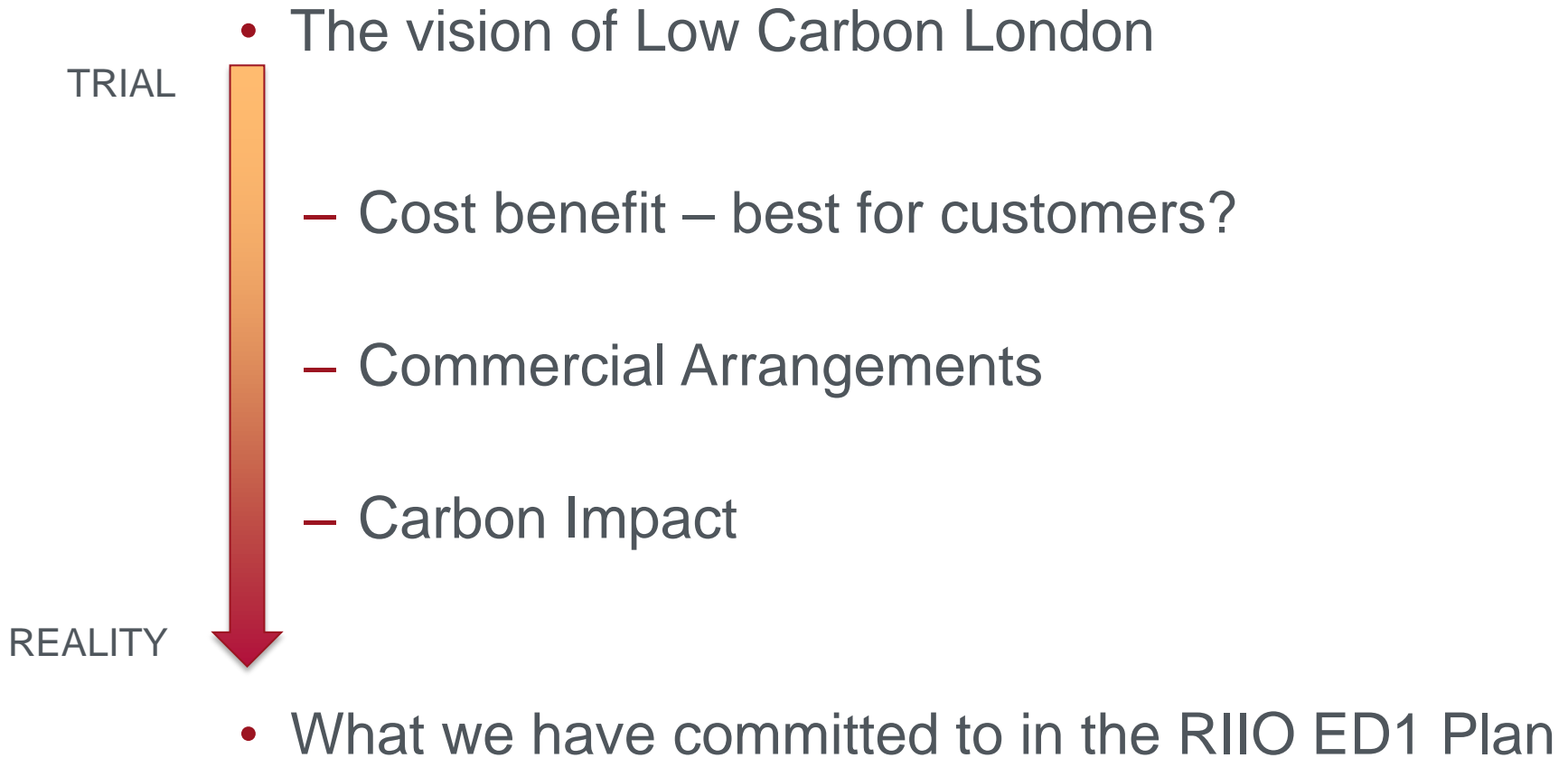
- STOR contract (basis)
- Significantly modified for DNO requirements
  - Locational based annex
  - Pricing annex (by fuel type)
- Both direct to DG operator and with Aggregators
- Higher price points than STOR
- £50 to £100/MW/hr Availability
- £200/MW/hr Utilisation



# Carbon Impact of DSR at Ebury Bridge

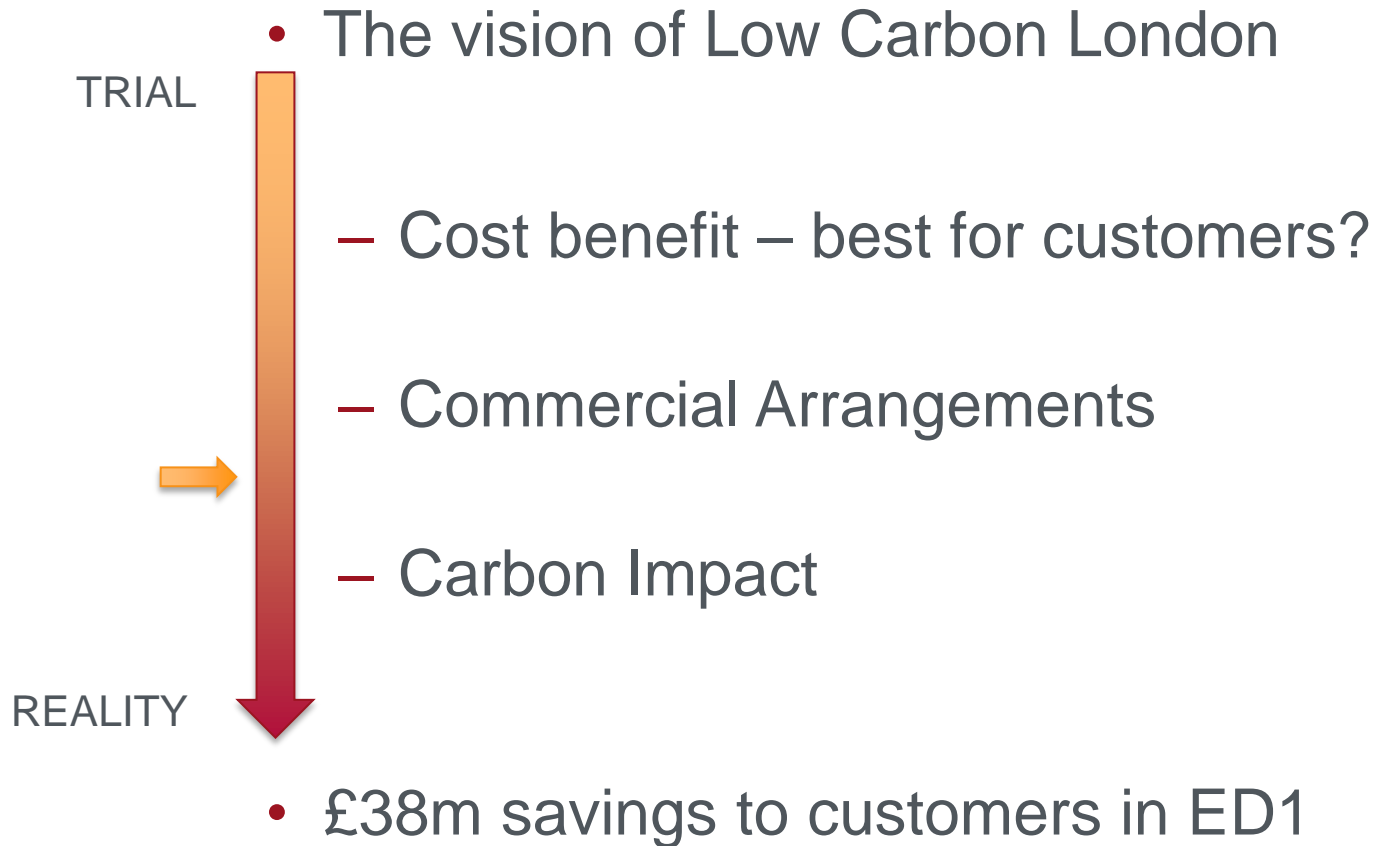


# DSR Readiness





# DSR Readiness



# UK Power Networks Innovation Portfolio

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- Come and talk to us on our stands here at the conference
- Visit our new website [ukpowernetworks.co.uk/innovation](http://ukpowernetworks.co.uk/innovation)
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# Thank you

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