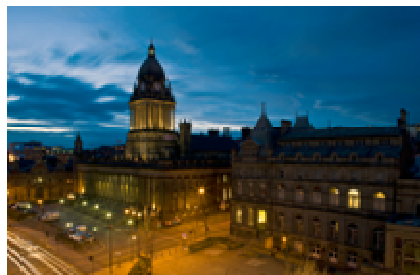


GB Smart Customer Response Trials Workshop 25 May 2011

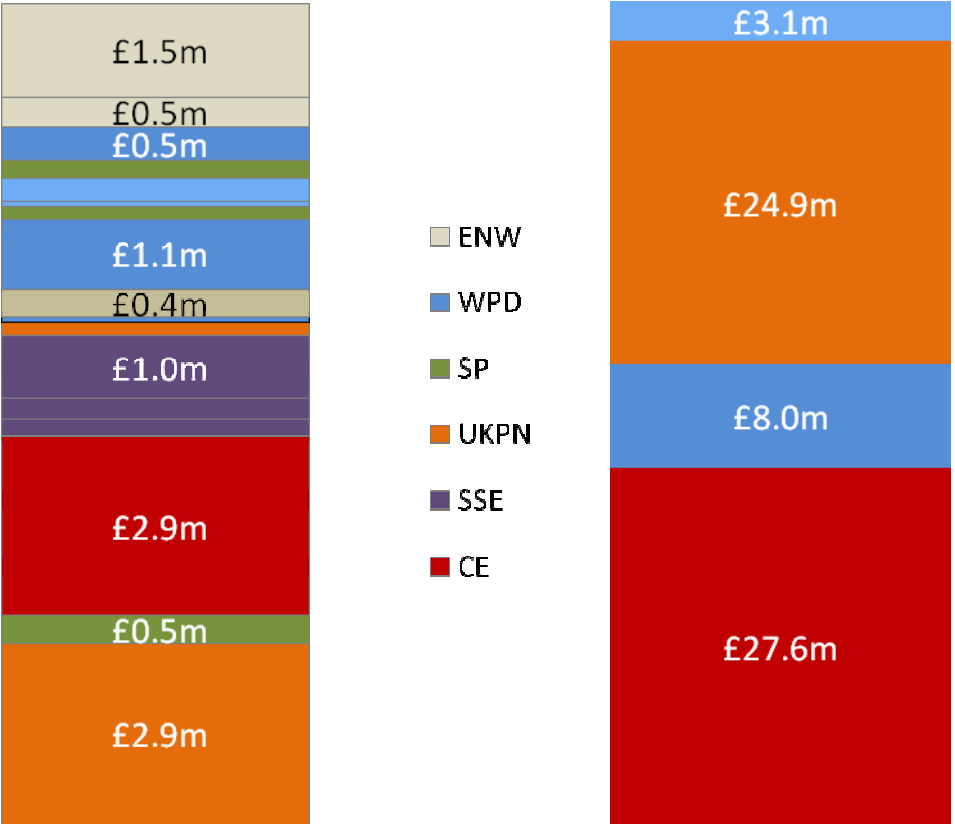


Customer-Led Network Revolution

GB Smart Customer
Response Trials Workshop
25 May 2011

Jim Cardwell

Active GB smart customer response trials






£13m first tier LCN fund

£63m second tier LCN fund

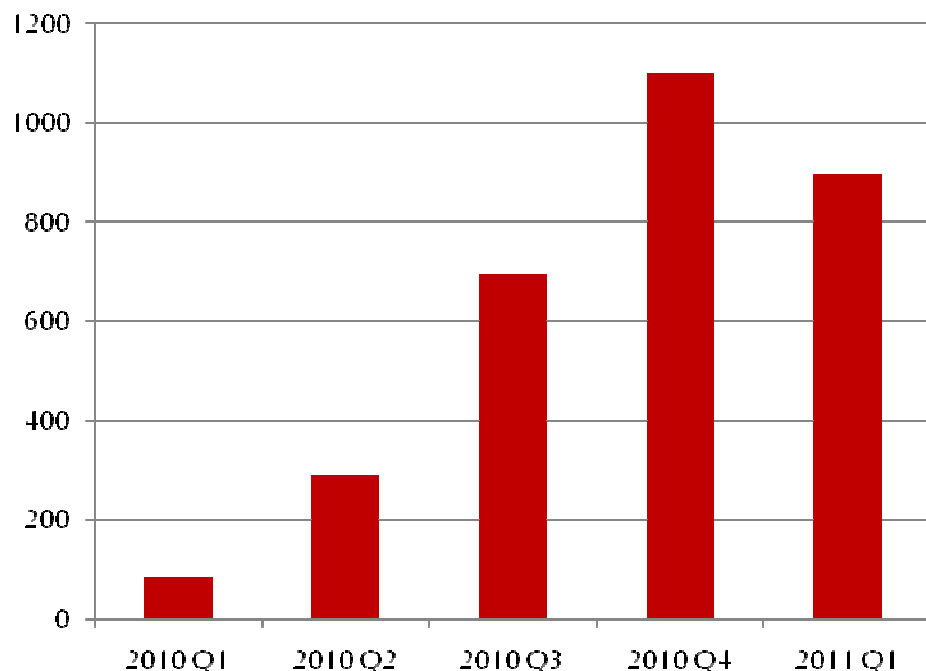
Active projects – customer engagement		
1 st Tier	SSE	Trial Evaluation of Domestic Demand Management Solution
1 st Tier	WPD	Hook Norton Low Carbon Community Smart Grid
1 st Tier	SP	Ashton Hayes Smart Village
2 nd Tier	CE	Customer-Led Network Revolution
2 nd Tier	UKPN	Low Carbon London
2 nd Tier	WPD	Lincolnshire Low Carbon Hub
-	SSE	NINES Shetland
-	ENW	Direct I&C engagement

Incentives in place for UK to meet carbon reduction targets

Incentives	Low-carbon technologies
Feed in tariff Renewable heat incentive Plugged in places	<i>Solar photovoltaic</i> 
Plug-in car grant scheme Community energy saving programme (CESP)	<i>Electric vehicles</i> 
CRC energy efficiency scheme Green deal	<i>Heat pumps</i> 

Customers are responding to the incentives

Microgeneration installations (CE)



Feed in tariff introduced April 2010

- Issues created for networks:
 - Voltage control
 - Thermal overload
 - Flicker

Solar photovoltaic	4kW
Heat pumps	3kW <i>12 kW on start-up</i>
Electric vehicles	8kW

Our project seeks to facilitate speedier and more economical take-up by customers of low-carbon technologies



1. **Learning Outcome 1 (LO1) - Monitoring:** What are current, emerging and possible future customer (load and generation) characteristics?
2. **Learning Outcome 2 (LO2) – Customer flexibility:** To what extent are customers flexible in their load and generation, and what is the cost of this flexibility?
3. **Learning Outcome 3 (LO3) – Network flexibility:** To what extent is the network flexible and what is the cost of this flexibility?
4. **Learning Outcome 4 (LO4) – Optimum solutions:** What is the optimum solution to resolve network constraints driven by the transition to a low carbon economy?
5. **Learning Outcome 5 (LO5) – Effective delivery:** What are the most effective means to deliver optimal solutions between customer, supplier and distributor?

Customer-Led Network Revolution partners



- Largest energy supplier in UK
- UK leader in deployment of smart meters
- Industry-leading customer sales
- To install 2m smart meters across UK
- Extensive experience in innovation



- Extensive knowledge of distribution networks, micro-generation, heat pumps, demand side management
- Broad experience of practical trials
- Monitoring and analysis of domestic generation and its network impact



- Internationally recognised leading researchers
- Multi-discipline approach
- Customer analysis
- End-to-end monitoring and analysis
- Smart campus test site in Durham