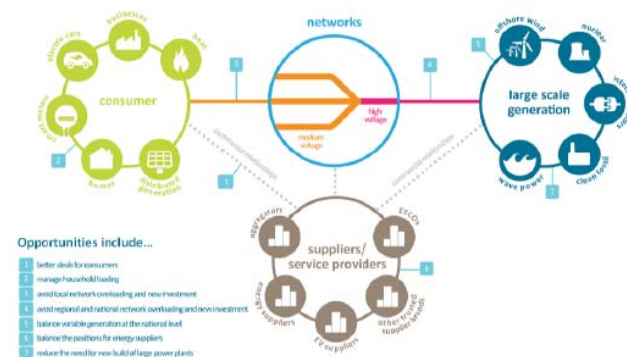




GB Smart Customer Response Trials Workshop  
25May 2011

Jeff Douglas

# Demand participation in WPD (E and W Midlands)



Lincolnshire Low Carbon Hub

Commercial Arrangements

Hook Norton Smart Community

# The Lincolnshire Low Carbon Hub

## Central Networks Tier 2 Project

- £3m funding from Ofgem
  - Large number of generation connection enquiries
  - Existing commitment to network reinforcement in the area
  - Already experiencing operating constraints associated with generation
  - Typical network to develop a model to apply to other locations
  - Ad hoc reinforcement is expensive
- How could we do cost effective investment ahead of need delivering efficiencies for us and customers?**



## Low Carbon Hub – Core elements

Network enhancements

Commercial agreements

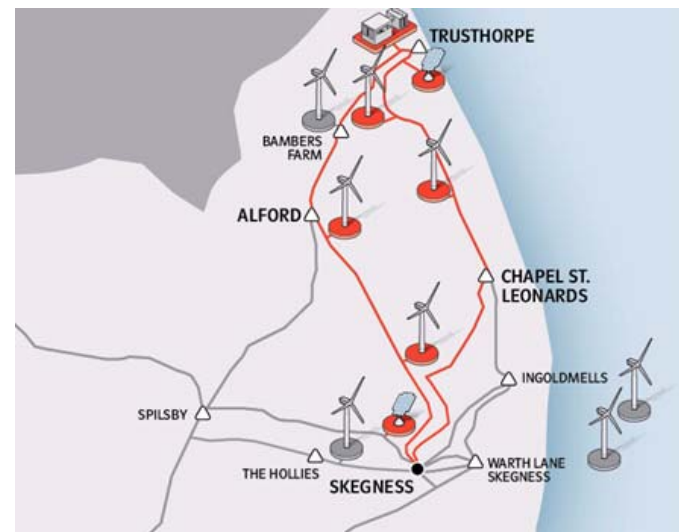
Dynamic voltage control

33kV active network ring

Flexible AC Transmission System  
(FACTS) Device

Dynamic system ratings

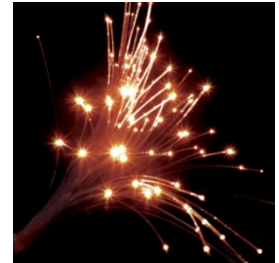
- Moving from a passive to active network management
- Enhanced Network Control
- Better use of the existing network capacity
- Incorporate new technologies
- Facilitate new commercial agreements



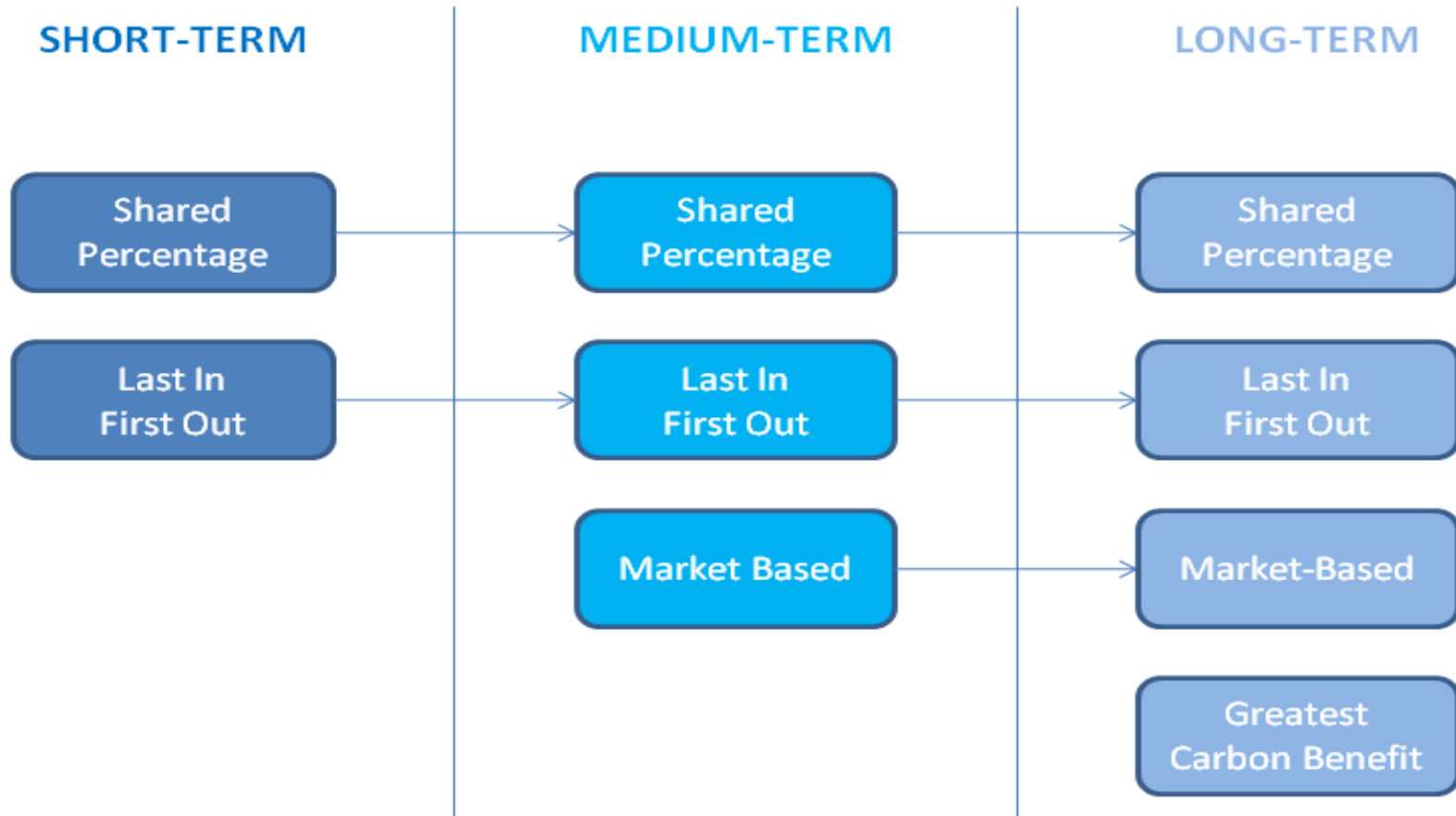
# Elements of the LCH – Commercial and Operational

## Commercial agreements

- Not just about new technology
- Potential for increased cooperation between Central Networks and generation operators
  - Maximise benefits for both parties
- Focus on medium to large scale generation (2-30 MW)
- Aiming to develop:
- New operational frameworks
- New commercial agreements
- Potential reduction in connection costs



# Commercial Arrangements



# Hook Norton Low Carbon Community

## Smart Zones

Groups of properties connected to one substation – consumption monitoring

## Smart Substations

Hubs gathering data from Smart Zones and Smart Neighbourhoods

## Smart Neighbourhoods

Areas including individual monitoring of Consumption using PLC

