

Introduction to the UK Smart Grid Sector



techUK's Smart Energy & Utilities Programme



Smart Grid in Britain: Opportunities and Market Overview

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Policy Drivers: The UK'S Energy Challenge

Sustainability



Existing
powerstation
closures

~25%

of total capacity by 2020



Affordability



Gas from
UK sources

~25%

of total supplies by 2020

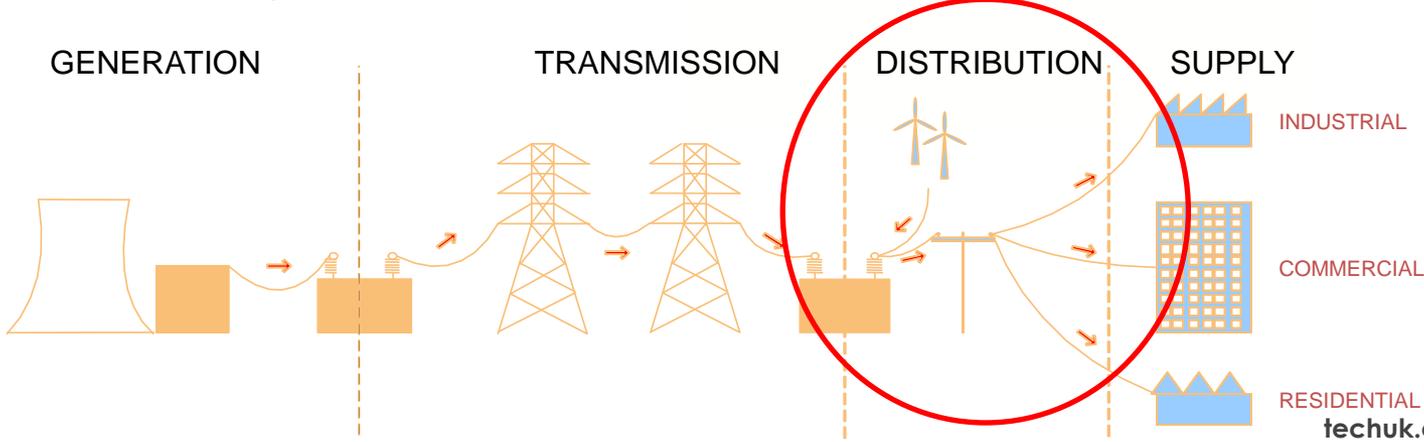
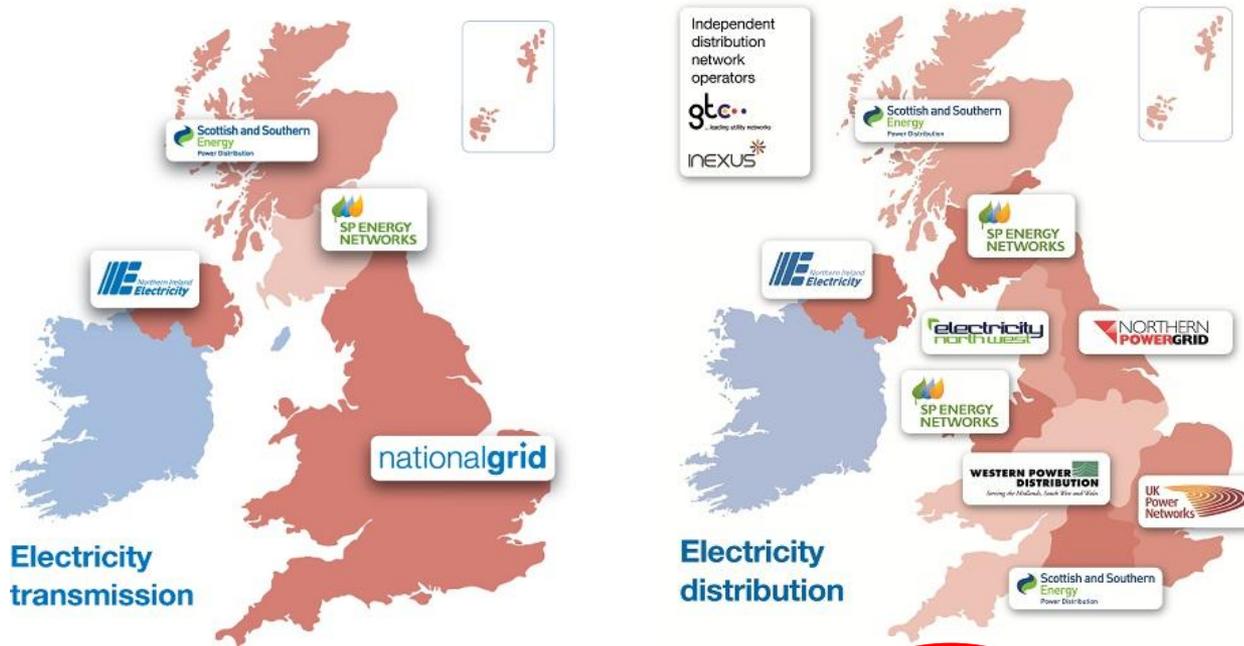


Security of
supply



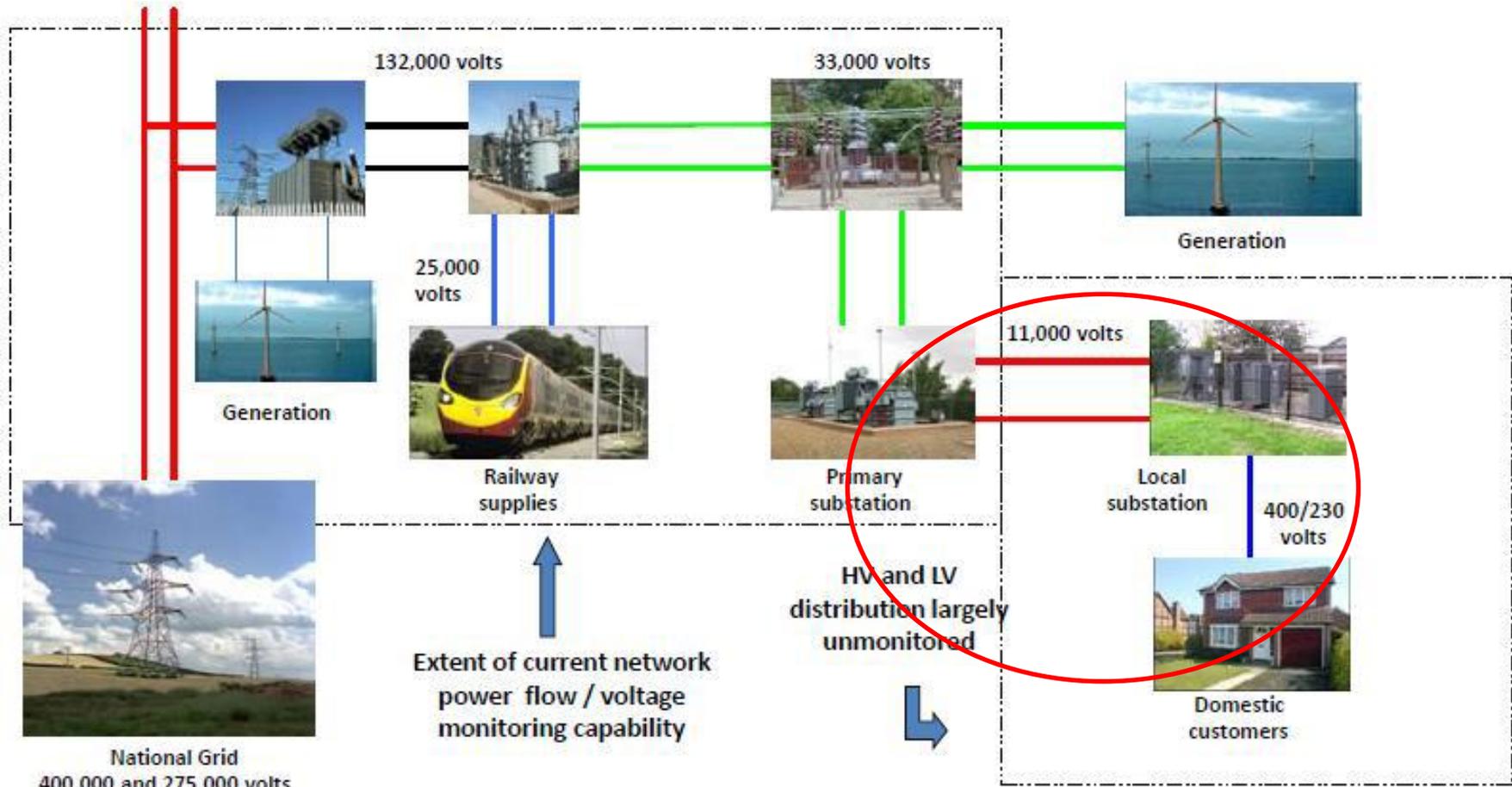


UK Market Structure



Source: Energy Networks Association

UK Transmission and Distribution Networks



SOURCE: Energy Networks Association

Phase 1 – UK Smart Meter Rollout

Nationwide rollout to take place from 2015 to 2020, 53 million meters, approx 26 million homes

Costing an estimated £11 billion, expected to deliver a net benefit to the UK of £6.7bn

The 'big six' energy suppliers are leading the rollout, coordinated by government with industry support

Consumers will pay for the rollout

The creation of a centralised **Data and Communications Company (DCC)** underpinned by Communications Services and Data Services

Lays a new national infrastructure to enable greater understanding of our energy networks and consumer behaviour – and a whole new market to use it....

Consumer Engagement

Data Security

Policy/Regulation

Data Privacy

Industry coordination

The UK Smart Meter Roll-out: techUK's role

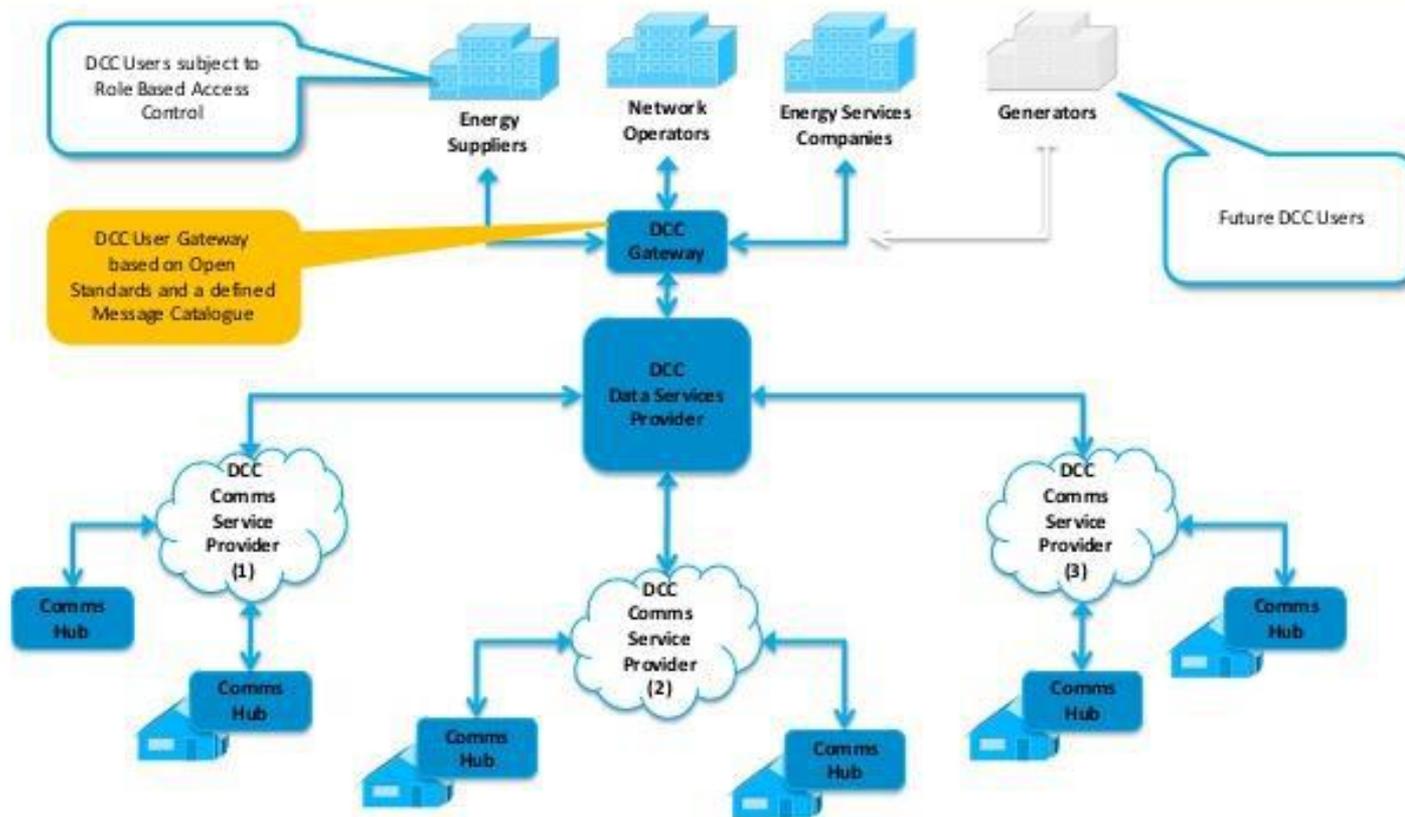


- The roll-out of smart meters in the UK is being coordinated by the Department of Energy and Climate Change (DECC). It will be governed by industry regulator Ofgem once the meters are in place. The ICT community provide the 'smart' to a traditional industry via:
 - **Communications Services** – Transferring huge new volumes of energy data to the DCC
 - **Data Services** – Controlling, securing and using that data to improve the energy system
 - **In Home Displays** – Engaging customers in their energy usage
 - **Consumer Access Devices** – Building on this to develop an integrated 'smart home'
- techUK members have access to, and representation on, multiple working groups that the DECC have set up to coordinate the smart meter roll-out.
- techUK is a commercially neutral party representing our members, feeding in the industry position, reporting back the latest developments to members and circulating the key outputs. Working through techUK, members have the opportunity to provide input to DECC/Ofgem in their capacity as techUK members and technical experts.

Our aim is to involve and represent the technology industry in smart meter and smart grid policy development enabling our range of members to identify the opportunities and make informed commercial decisions.

The Data and Communications Company

- Overall DCC Contract – day-to-day management and compliance
- 2 services contracts – comms (3 regions, 3 contracts) and data (1 contract)
- All awarded summer 2013 to be active for 2015 roll-out.

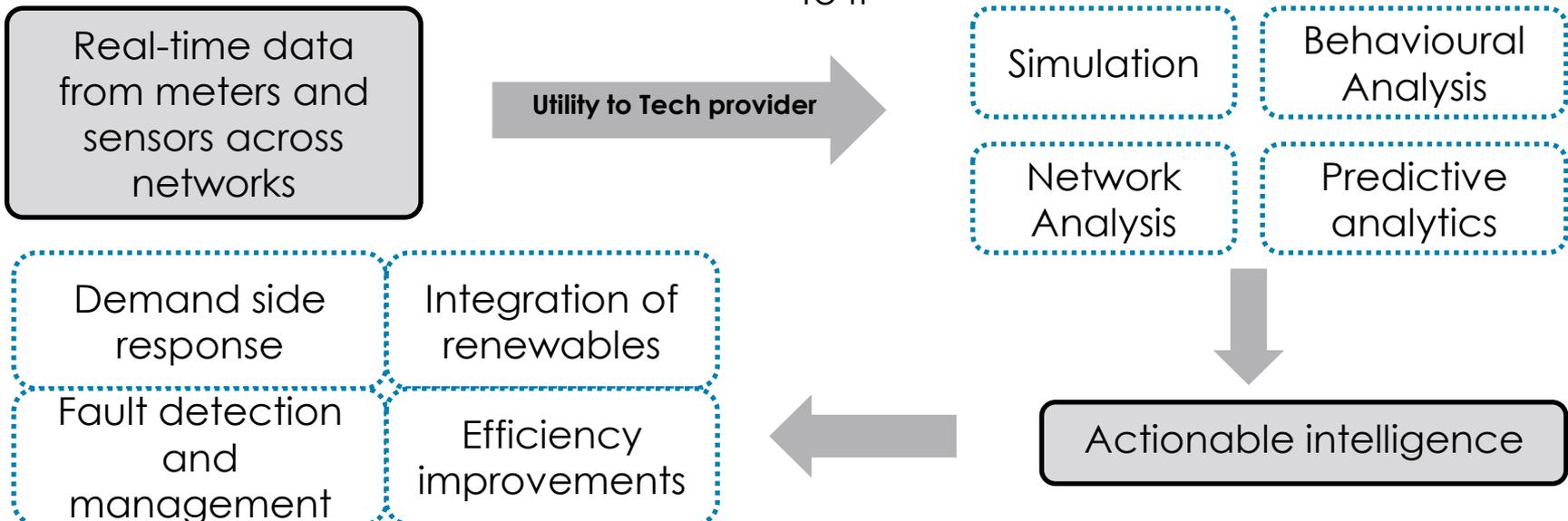


Phase 2 – Realising a UK Smart Grid

Smart meters will provide suppliers and networks with vast amount of new data on energy usage, consumer behaviour, network operations and distribution weak points....

How to use this data effectively is a key pillar of the smart grid

An electricity network that can **intelligently integrate** the actions of all users connected to it



Millions were spent on smart grid analytics in the US in 2012. By 2020 this is expected to be in the billions and we want the UK to be at the forefront – as it has all the tools to be.

Low Carbon Networks Fund (LCNF)

- £500m over the five year price control period until 2015
- Single largest pot of money that any one country is allocating to understanding smart grid.
- Integrated trials, working with third parties.

Network Innovation Competitions (NIC)

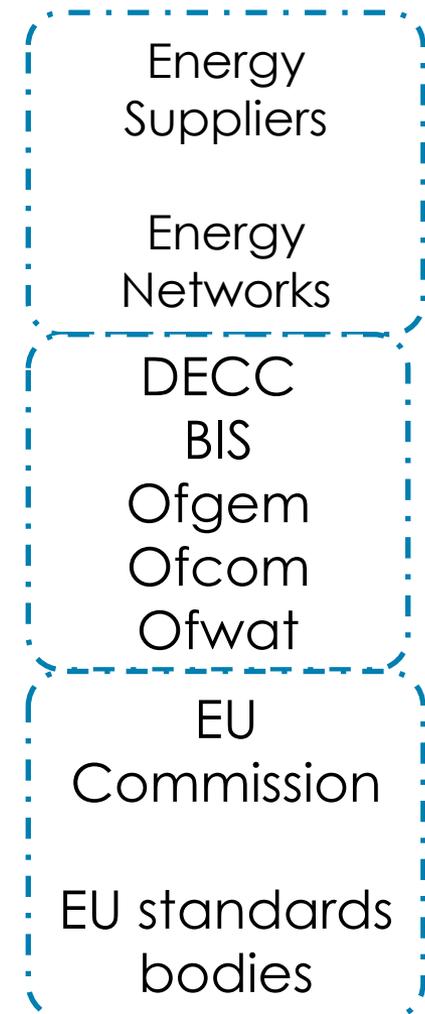
- Annual competitions for electricity and gas from 2013
- Network companies compete for funding for research, development and trialling for new technology, operating and commercial arrangements
- Funding provided for the best innovation projects which help all network operators understand what they need to do to provide environmental benefits and security of supply at value for money as Great Britain (GB) moves to a low carbon economy

RIO: revenue = incentives + innovation + outputs.

- A new performance based model to set price controls to ensure that consumers pay a fair price for investment.

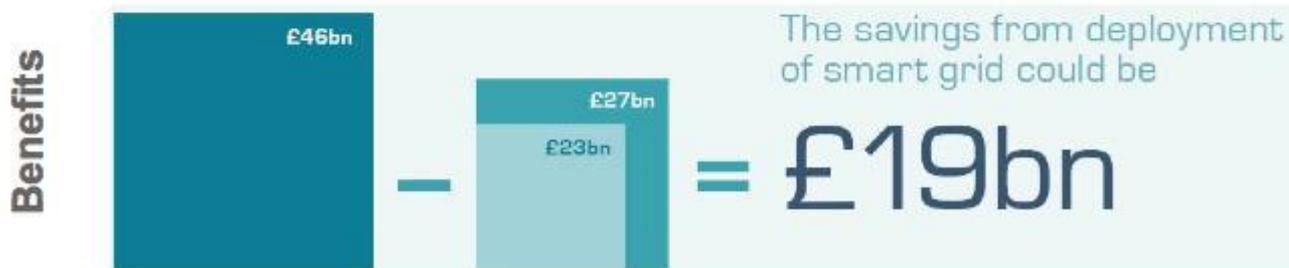
Smart Energy – ICT Key Players

IT/Data services	IBM, CISCO, Oracle, CGI, Microsoft
Data Analytics	HP, Capgemini, SAP
Security	BAE Detica, HP, Siemens
Consumer electronics	Panasonic, Sony, Samsung, Toshiba
Telecoms	O2, Verizon, Cable & Wireless, BT
Hardware manufacturers	Landis & Gyr, Elster
Consultancy	Accenture, Capgemini, KPMG
Central Bodies	Gemserv, Elexon



Smart grid: A race worth winning?

Core costs and benefits



Early-stage research from SGF evaluation framework plus EY assumptions
All expenditure figures are NPV (2012-2050)

Smart grid: A race worth winning?

Supply chain benefits



- A network of like-minded groups from across the world dedicated to improving the sharing of knowledge and promoting collaboration in smart grids.
- GSGF members:
 - Australia – Smart Grid Australia
 - **Britain – SmartGrid GB**
 - Canada – Smart Grid Canada
 - Europe – EDSO for Smart Grids
 - India – India Smart Grid Forum
 - Ireland – SmartGridIreland
 - Japan – Japan Smart Community Alliance
 - Korea – Korea Smart Grid Association
 - USA – Gridwise Alliance

Further information

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