

Smart Grids

Duncan Burt, All Energy 2010

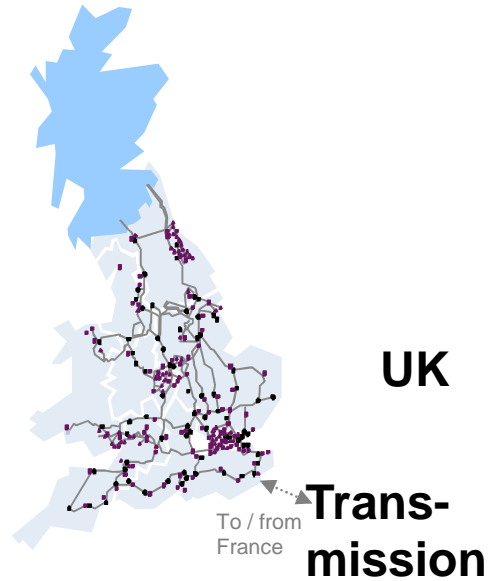


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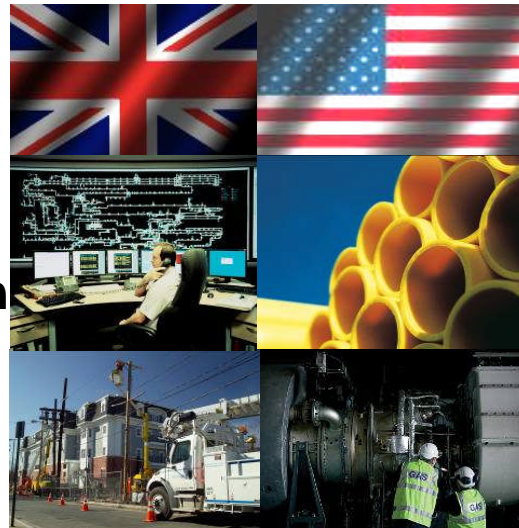
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UK - E& W Electricity Transmission & GB System Operation

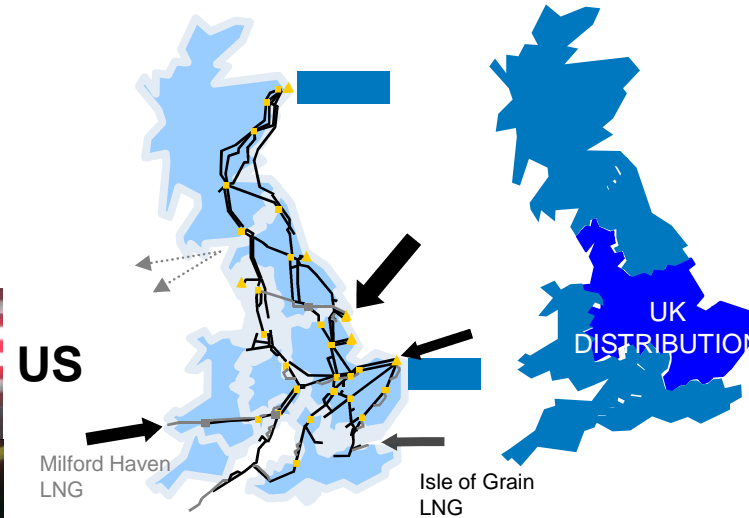


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Elec

UK Gas Transmission & Distribution



Distribution

Gas

.....we are committed to being an innovative leader in energy management, and to safeguarding our global environment for future generations.

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Challenges for the electricity supply chain – Smart Grid drivers

Network investment & operation

- ◆ Timely capacity – planning & consent / supply chain
- ◆ Providing flexibility and avoiding stranding assets

Decarbonising electricity

- ◆ Integrating less flexible generation
- ◆ Integrating variability
- ◆ Integrating distributed generation

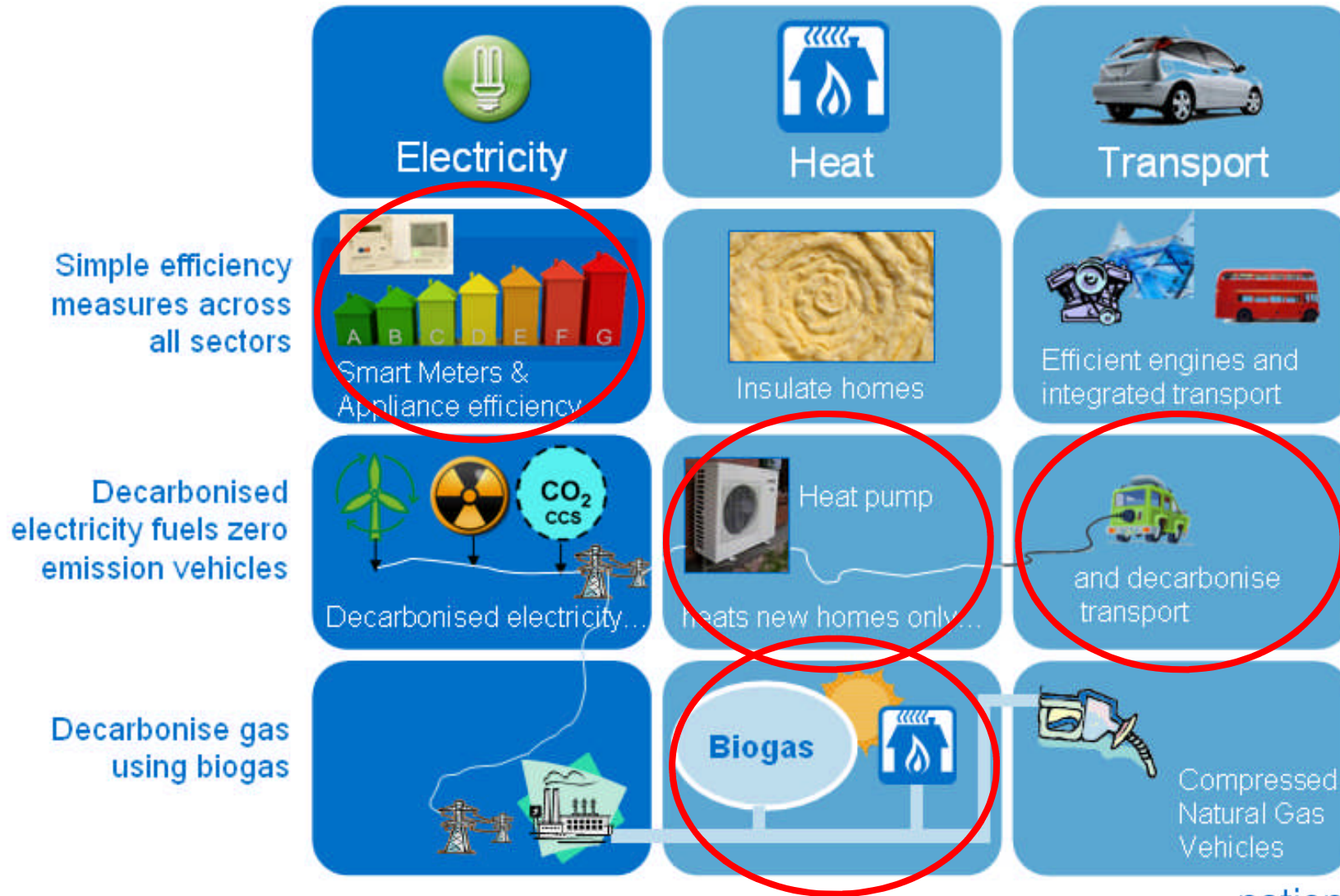
Demand Responsiveness

- ◆ Efficient use and TOU of energy
- ◆ Integrating flexible demand

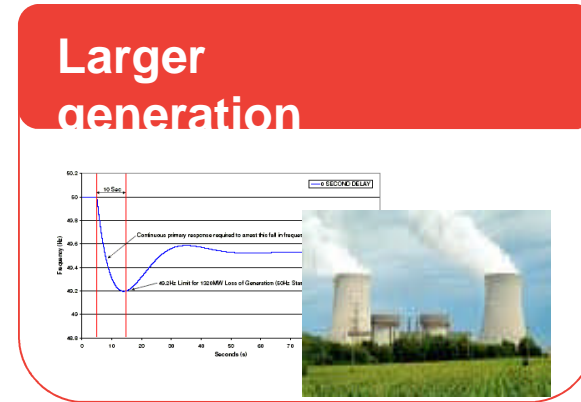
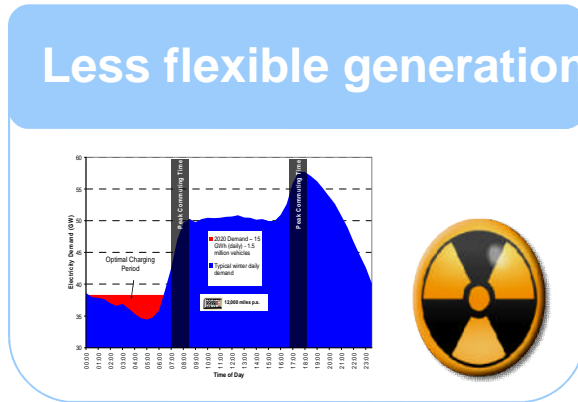
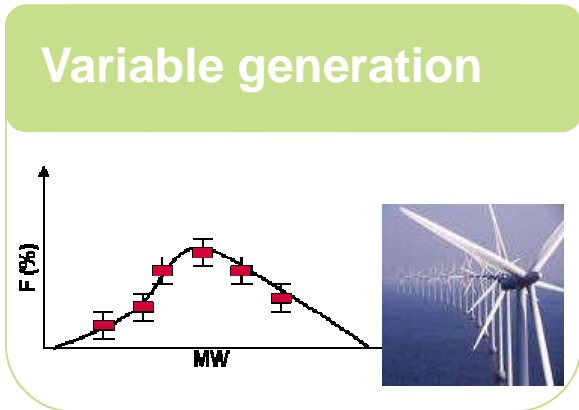
Electrifying heat and transport

- ◆ Increased demand:
 - ◆ Electric vehicles
 - ◆ Heat pumps

Smart's has a key role to play across all 3 sectors



Operating the system - Generation



Challenge will change over time:

Increased wind

..Electrification/efficiency/smart....

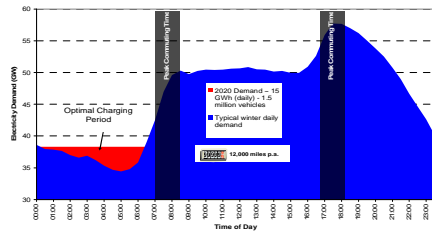
retirement of flexibility.....

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Operating the system - Demand

National Balance



Micro-generation



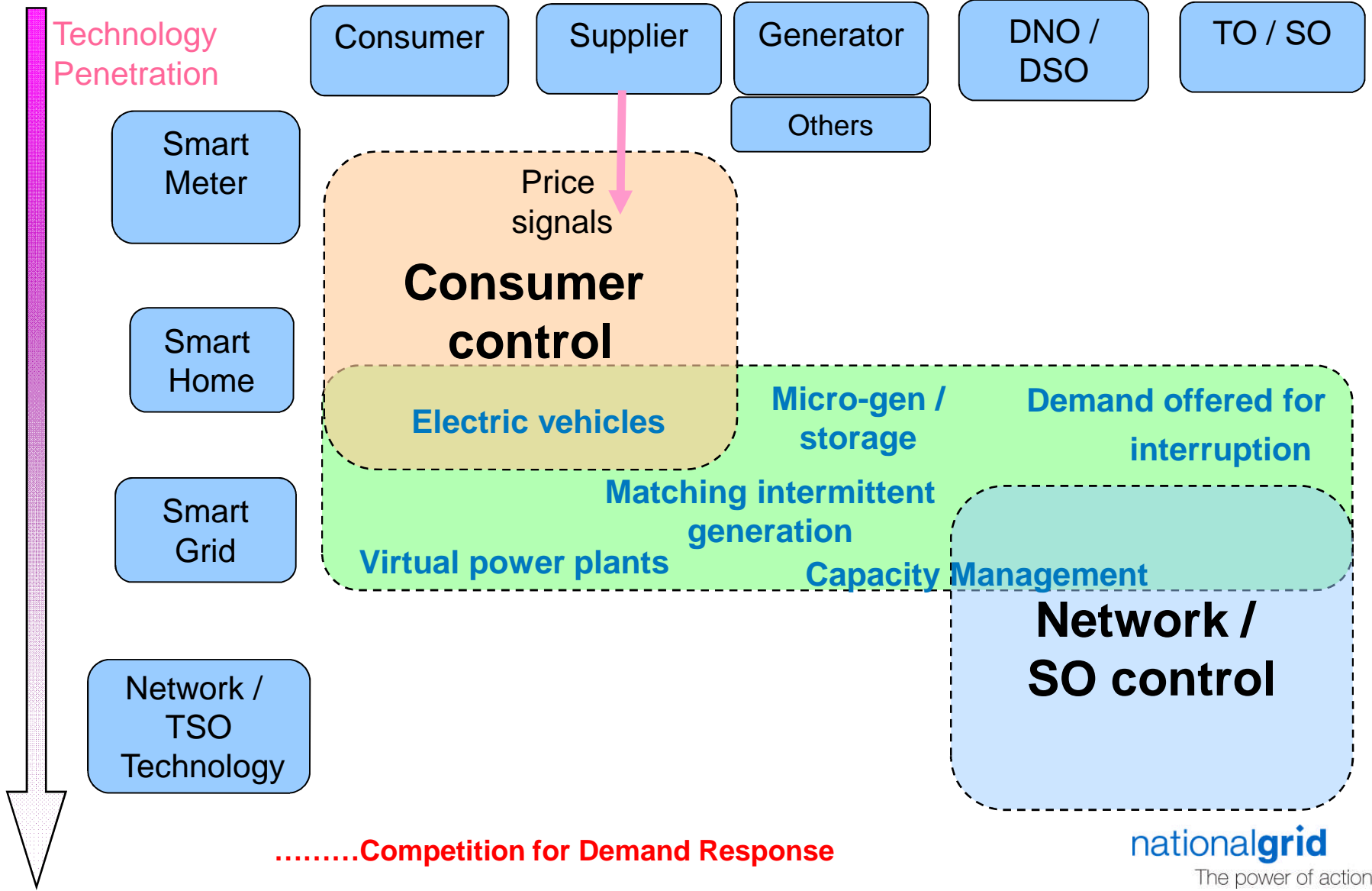
Active Distribution Networks



New Demand blocks of heat and transport provide major flexibility opportunity beyond 2020

Electricity Smart and Smart Grid

Stakeholder 



.....Competition for Demand Response

Summary

- ◆ Smart could play a major role
 - ◆ Consumer engagement
 - ◆ Reducing investment/cost
- ◆ The proposition will evolve
 - ◆ Changes in demand sources
 - ◆ Changes in need
- ◆ The only fundamental
 - ◆ Half hourly metering

Thank you



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