Session 1:
Building on the foundations & route-map for the future

Jo Butlin – EnergyBridge
David Capper – BEIS
Andrew Wright – Ofgem
Cathy McClay – National Grid
A GOVERNMENT VIEW ON SMART SYSTEMS & FLEXIBILITY

DAVID CAPPER
DEPT FOR BUSINESS ENERGY & INDUSTRIAL STRATEGY

27 June 2017
Our electricity system is undergoing fundamental change

**Emerging System – increased interactions**

- Low carbon
- Interconnectors
- More distributed
- Storage
- Demand-side response
- Electric vehicles/heat
- Smart grids
- Smart everything!

**Yesterday**

- Carbon intensive
- Centralised generation
- Predictable supplies
- Supply side response
- Linear grid operation
What’s happened in the last year?

- 1.4 GW
- 500 MW
- 201 MW
- 2 GW
- DSR in T-4 Capacity Market in 2016/7
- New batteries in T-4 Capacity Market in 2016/7
- New batteries in Enhanced Frequency Response tender
- New interconnectors entering construction

- This is not some future change, it’s happening now.
Smart Systems Call For Evidence

You said you want:

**Removing barriers to smart technologies**
*Regularity, clarity and fair charges*
Define storage in regulation, deliver a storage licence, planning reform, recalibrate policy/network charges, enable colocation with renewable.

**Smart homes and businesses**
*Infrastructure and system enablers*
Deliver smart meters, half hourly settlement, appliance automation & cyber security, consumer protections.

**Markets that work for flexibility**
*Access to markets and new markets*
Improve access to Capacity Market, Balancing Mechanism, Ancillary Services, enable value stacking, create new local markets for flexibility.
What else has happened in policy?
How Ofgem is responding to a changing system

National Grid Power Responsive Conference

Andrew Wright
Senior Partner Energy Systems
June 2017
The changing energy system

<table>
<thead>
<tr>
<th>Decarbonisation</th>
<th>Technological Change</th>
<th>Digitisation and smart systems</th>
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**Impact on the electricity system**

- Changes in the generation mix
  - Intermittent
  - Distributed
  - Less flexibility
  - More storage
- More active networks and demand side
- New large and uncertain loads
  - Heating
  - EVs

**Right incentives on market participants**

**Right incentives on network companies**

**Right framework for system operators**

**Right approach to residual cost recovery**
An important part of our Forward Work Programme

FWP Chapter 2. *Facilitating change in the energy market*

FWP Chapter 3. *Setting RIIO 2 up for success*

**Key enablers**
- Smart meters
- DCC
- Half hourly settlement
- Faster, reliable switching
- Code Governance
- Nexus

**Residual charging**
- Embedded benefits
- TCR
- Gas charging review

**Effective incentives**
- Future focussed strategy
- Future system operator
- RIIO 2 strategy
- Flexibility
We already have a number of initiatives to address the system transformation.

**Phase 1 – established work-streams (by 2016)**
- Embedded benefits
- Electricity distribution connections work
- Electricity system operator (SO) role and separation
- Flexibility call for evidence and spring plan

**Phase 2 – recently initiated (since 2016)**
- Targeted charging review (TCR)
- Short-term flexibility follow-ons
- RIIO 2 early preparations
- Drive SO to reform balancing products

**Phase 3**
- Next wave or priority actions, with clear understanding of linkages/dependencies

**Future Focussed strategy**

**The energy system of the future**
Our goals for the regulatory framework governing the GB electricity and gas system

Ensure a regulatory framework that drives innovation and supports the transformation to a low carbon energy system that delivers the sustainable, resilient, and affordable services that all consumers need.

- Incentives on system operators and network owners that are aligned with the interests of consumers
- Charges for monopoly services that reflect incremental the costs and benefits
- Recovering residual costs in a way that is fair and minimises harmful distortions
- Regulation that is neutral between different technologies, systems and business models
- Using market based approaches where it is in consumers’ interests
- A predictable regulatory regime that supports efficient investment and allocates risk efficiently
New priority areas arising from our future focussed strategy work

More efficient network usage signals

• Creating better signals for network users about costs and benefits of using the network

Driving whole system outcomes

• Clarifying roles and expectations of network companies in coordinating to drive efficient whole system outcomes
• Aligning incentives and money flows through RIIO2

Network investment risk

• Confirming our approach to the allocation of investment risk for RIIO 2 between network companies, users and consumers.
Three main clusters of work

Network charging, connections and access
- Targeted charging review
- Embedded benefits
- Improved connections for DG

Network regulation
- RIIO 2 preparation

System operation
- More independent SO
- Reform of balancing products etc.
- SO/DSO co-ordination work

From existing work
From Strategy

1. More efficient network usage signals
2. Driving whole system outcomes
3. Network investment risk
Ofgem is the Office of Gas and Electricity Markets.

Our priority is to protect and to make a positive difference for all energy consumers. We work to promote value for money, security of supply and sustainability for present and future generations. We do this through the supervision and development of markets, regulation and the delivery of government schemes.

We work effectively with, but independently of, government, the energy industry and other stakeholders. We do so within a legal framework determined by the UK government and the European Union.
Laying the foundations – how aware are people of what is going on and what is being done?

Cathy McClay
Head of Commercial, Electricity
National Grid
Building on the Foundations and Route Map for the Future

We are operating the future electricity system today

As an industry we have achieved much in the last year

There is still much to do and it is important to keep momentum
The system has evolved more quickly than expected

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<tr>
<th></th>
<th>2012 prediction for 2020</th>
<th>Actual 2017</th>
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<tbody>
<tr>
<td>Solar</td>
<td>1 GW</td>
<td>12 GW</td>
</tr>
<tr>
<td>Wind</td>
<td>12 GW</td>
<td>15 GW</td>
</tr>
<tr>
<td>% Embedded</td>
<td>12%</td>
<td>23%</td>
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We have had a summer of ‘firsts’

25-26 Mar

26 May

11 June

21 Apr

7 June
We have achieved much as an industry in the last year:

- 60% Increase in active BMUs since 2014
- 200 participants in storage working group
- >500 MW increase in NG flexibility from non-traditional sources in 2016
- System Needs and Product Strategy published
- Enquiries from 250 new potential providers in 2016
- BEIS and Ofgem call for evidence
There is still much to do and it is important to keep momentum

**Awareness**
- Awareness to date has focused on opportunities and case studies
- You have told us that regulatory uncertainty is a barrier to entry
- Through Power Responsive we can support you in navigating the changes

**Confidence**
- Our Product Strategy will be published in the Autumn – set clear timescales and ambition for future product design
- Facilitating conversation on wider access to Balancing Mechanisms

**Simplicity**
- Simplicity in National Grid Balancing Products – rationalise, standardise, improve
- Extend conversation to other markets such as BM and wholesale
- Working closely with DNOs to tackle whole system – learning by doing
Building on the Foundations and Route Map for the Future

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