

Public

# Flexibility in the Future Energy System

---

**Flexibility of Electricity Demand Workshop:  
REDPeAk and DEePRED Projects**

Angela Love  
Director of Strategy and Communications  
February 2019

**ELEXON**

---

# Agenda

---

**1** What is driving the energy system of the future?

**2** The energy system of the future

**3** A new set of challenges... and the solutions

# What is driving the energy system of the future?

## All parts of the industry have changed...



- ✓ Increases in embedded generation
- ✓ Growth in the number of suppliers
- ✓ Government intervention and price caps; faster switching programme
- ✓ European standardisation
- ✓ Smart meter roll-out
- ✓ New role for DNO transforming into DSO
- ✓ Expanding range of market participants
- ✓ Value assigned to flexibility
- ✓ New technologies and solutions (e.g. storage, V2G, peer-to-peer trading, etc.)

**... and will continue changing.**

## Changing policy and regulation focus

**Decarbonisation**

**Decentralisation**

**Digitisation**

**Democratisation**

# The energy system of the future

## The old energy system



- A few dozens of large participants
- Linear, controlled vertically
- Asset based

## The new energy system



- Hundreds of smaller participants; prosumers
- Decentralised, controlled from multiple centres
- Data based

### Policy focus



**The Clean  
Growth Strategy**  
Leading the way to  
a low carbon future

**Building our  
Industrial Strategy**

**Smart Systems  
and Flexibility Plan**

### Regulation focus









**Smart Systems  
and Flexibility Plan**

**ForwardWorkProgramme**  
Consultation 2019-2021

# A new set of challenges... and the solutions

## New challenges for balancing the grid & managing the networks

-  Hard to predict renewable generation
-  Changing demand patterns due to on-site renewables and storage
-  New sources of demand (EVs, heat) with yet unknown consumption patterns
-  Changing nature of demand peaks
-  Changing role for DNOs and the System Operator
-  New sources of flexibility and balancing services with unknown patterns



## New solutions

### Wider access to markets, e.g.

- Allowing more participants to provide balancing services
- Creating harmonised local markets

### Visibility of new resources, e.g.

- Data availability/ accessibility
- Common standards
- Data platforms

### Changes to market design principles, e.g.

- Half-hourly Settlement
- Supplier Hub review
- Network Charging Reform



---

---

Angela Love  
Director of Strategy and Communications

[www.elexon.co.uk](http://www.elexon.co.uk)