Stakeholder engagement workshops

Co-creating our Business Plan Commitments for 2023-2028

February & March 2020

WESTERN POWER DISTRIBUTION

Serving the Midlands, South West and Wales

POWER CUT? CALL 105

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Workshop one (topic groups 1a & 1b): *The landscape we expect to operate in*

WESTERN POWER DISTRIBUTION

Serving the Midlands, South West and Wales

Network Reliability

Definitions

- **Network reliability:** this refers to the everyday performance of the network and its ability to serve our customers, taking into account the number and frequency of power cuts (customer interruptions) as well as their duration.

The landscape we expect to operate in

- **Keeping the lights on** remains very important
- **The dependence on electricity** will grow if customers move to electrical power for heating and transport
- **Changing customer behaviour** will mean that customers will expect to use their connection more dynamically, with Electric Vehicle or Battery Storage equipment flexing demand and consumption

Key context

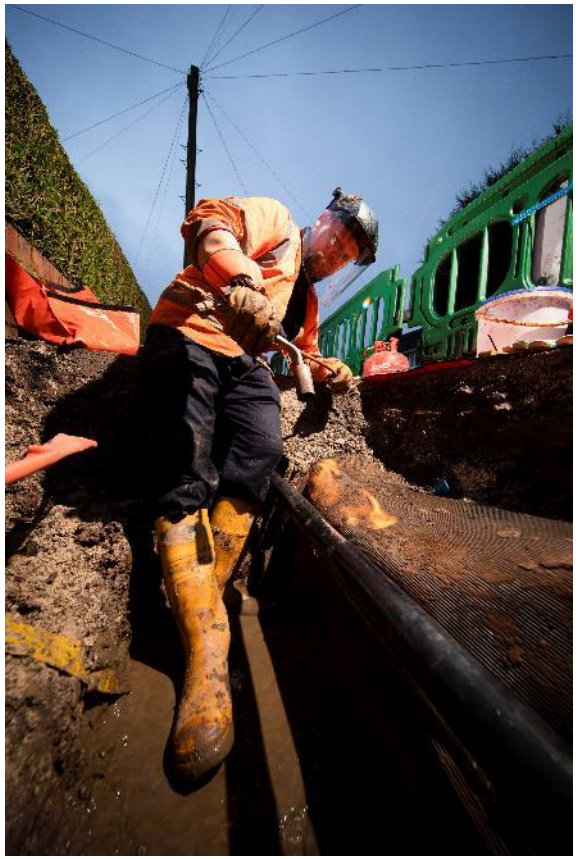
- Customer Minutes Lost (CML) measures duration of power cuts
  - Av duration that customers were without power: **25 mins**
- Customer Interruptions (CI) measures number of power cuts
  - On average customers have 1 power cut every 26 months
- Short Interruptions (less than 3 minutes): **476** incidents affecting **over 7m** customers
- Worst Served Customers with higher than average fault history
  - Number customers with 12 or more HV interruptions in 3yr period: **6,385**

Network Reliability

Priorities stakeholders have told us to consider:

- Power cut frequency
- Customer service during power cuts
- Worst served customers (significantly higher than average number of power cuts)
- Power cut duration
- Quality of supply (e.g. short interruptions, flickers, dips etc)
- Interconnectivity of the network (more options to reconfigure the network during power-cuts)
- Overall health of network assets (e.g. replacing and refurbishing aging assets sooner)

Would you add or change anything?



Network Resilience

Definitions

- **Network resilience**: this is the ability of the network to withstand extreme events such as storms and flooding, and having the ability to recover quickly from widespread power black outs.

The landscape we expect to operate in

- **Climate change** is changing the patterns of weather that we see.
  - Storms are more likely in the future with more lightning, flood events and high winds predicted
  - Continued programme of tree clearance required to increase storm resilience
  - Trees growing faster in warmer climate

Key context

Since 2015:

- Flood defences installed: **69** substations
- Resilience tree cutting: **2,947 km** strategic overhead line cleared
- Design specification of overhead transformers has defended them against lightning strikes

Network Resilience (severe weather)

Priorities stakeholders have told us to consider:

Tree cutting
(high risk circuits)

Flood protection
(key substations)

Scenario planning / data analysis
(to better identify areas of network at risk due to severe weather)

Would you add or change anything?

Cyber Resilience

Definitions

- **Cyber Attack:** this is the attempt to gain unauthorised access and control of a computer network / system to cause damage or to steal information.
- **Cyber Security:** this is the technology, processes and controls that can be put in place to protect systems against cyber attacks.

The landscape we expect to operate in

- **Cyber attacks** are growing in frequency and sophistication, increasing threat and risk to:
  - **Network security**: risk of power cuts, safety of staff
  - **Systems security**: risk of customer and company data access / loss
- The move to a **smart network** will pose a risk to:
  - **Control**: increasing interconnection, monitoring and control of network assets (e.g. substations) requiring cyber security
  - **Customers**: more data shared with and accessed by customers (e.g. smart meters)
  - **Flexible services**: more real time data interfaces with our systems will be created
- **Regulation** will require further enhanced cyber security measures

Key context

- **7,500** desktops, laptops, Servers and smart devices to secure
- **122,000** malicious e-mails blocked per month
- We have traditionally taken data from our **1,800** primary substation sites
- In the future we are likely to take data from many of our **200,000** distribution sites

Cyber Resilience

Priorities stakeholders have told us to consider:

Network security – risk of power cuts due to a cyber attack

Coordinate network planning with other utilities to find best solutions

Systems security – risk of data loss/access
(e.g. customer personal data)

Incident recovery plans

Collaboration to share best practice approaches
(e.g. Government agencies and stakeholders from other industries)

Would you add or change anything?

Whole System Approach to Achieve Net Zero

Definitions

- **Net Zero**: the Government has set a target to achieve net zero greenhouse gas emissions by 2050 in the UK
- **Whole system outcomes:** this is an approach to ensure that the energy system as a whole is effectively coordinated so that it delivers best value for consumers in terms of affordability, security and sustainability
    - Incorporates: electricity, gas, (distribution and transmission) heat and transport

The landscape we expect to operate in

- **Closer collaboration** between gas and electricity to solve network constraints (short term) and make best use of existing infrastructure to reach net zero target (long term)
- We must carry out an **assessment of best solutions** to inform investment decisions and ensure neither the gas or electricity networks are over or under developed to deliver a net zero future
- **Increasingly open data** will allow for greater access to information from other network operators to promote whole system thinking across energy, heat and transport

Key context

- Of the total GB energy demand* in 2018, **26% was met by electricity and 74% was met by gas**

  (*excluding oil and solid fuel)
- WPD's Distribution Future Energy Scenarios (DFES) are aligned with National Grid's Future Energy Scenario (FES) planning
- Joint Regional Development Plans are being created with National Grid

Whole System Approach to Achieve Net Zero

Priorities stakeholders have told us to consider:

Facilitate collaboration between local groups to deliver local energy plans
(e.g. local authorities, developers, EV charge point providers)

Coordinate network planning with other utilities to find best solutions

Localised WPD future energy scenarios
(predict future changes and uptake of e.g. PV, wind and energy storage)

Where reinforcement is required ensure it's "future proofed"
(e.g. caters for the predicted needs up to 50 years)

Help local communities to achieve their net zero carbon emissions targets
(support the creation of local development plans, net zero targets and climate emergency plans)

Would you add or change anything?

Innovation and New Services

Definitions

- **Innovation:** this is finding better ways of working and adopting innovative ideas to improve the efficiency and effectiveness of our services - safely and reliably.
- **Flexibility:** this is where the DNO pays customers to change their demand or generation output to help manage network capacity and peak periods
  - Benefits: WPD can avoid or defer costly network reinforcement construction. Customers providing flexibility services can generate additional revenue.

The landscape we expect to operate in

- **Flexibility:**
  - **Market facilitation**
  - **Decarbonisation:** e.g. flexibility provided by low carbon sources
  - **Network Security**
  - **Data Security**
- **Innovation:**
  - **Increased network utilisation**
  - **Decarbonisation:** facilitate low carbon technologies
  - **New customer services**
  - **Collaboration**

Key context

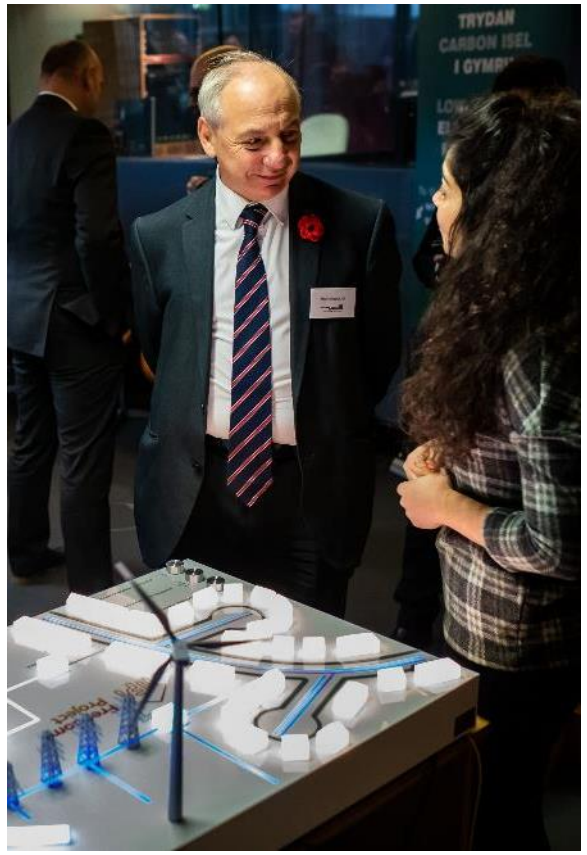
- **334MW** of flexibility currently being sought
- **42** flex locations covering approximately 1/5 of the network
- **123MW** contracted to date
- **31** active innovation projects funded through Ofgem's innovation stimulus

Innovation and New Services

Priorities stakeholders have told us to consider:

- Roll-out network flexibility to all areas for commercial customers
- Roll-out flexibility services for domestic customers
- Communication, education and advice for customers
  (to explain the benefits and encourage their participation in flexibility)
- Support community energy projects to connect to the network
- Collaborate with industry to offer tariffs to encourage flexibility
  (e.g. DNOs and suppliers)
- Facilitate heat pump take up
  (and other low carbon technologies)

Would you add or change anything?



Roundtable discussion

In this roundtable discussion we will ask you to consider the following questions…

1) **Blank page – what are the priorities you want delivered under each topic?**
2) **Review the priorities other stakeholders have started to fill in on the blank page – do you agree, is there anything more?**
3) **Blank page – what commitments do you want us to deliver under these priorities?**

Workshop One	
Topic group 1a	**Topic group 1b**
• Network reliability • Network resilience (to severe weather) • Cyber resilience	• Whole systems approach to net zero • Innovation and new services