DSO webinar

5 August 2020

Simon Brooke

Bringing energy to your door

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www.enwl.co.uk

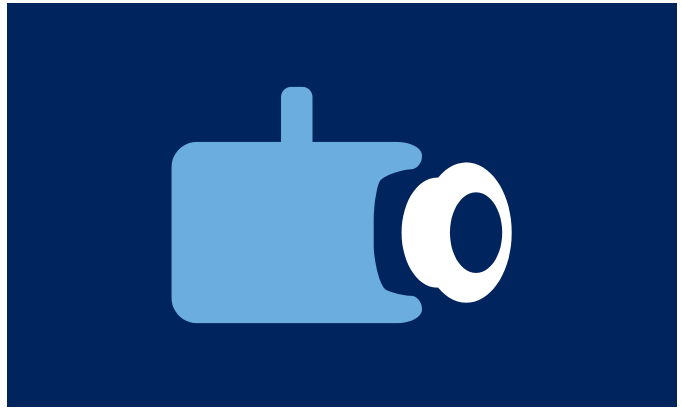
Webinar format

30 minute presentation

20 – 30 minutes questions & answers

Please stay on mute during the presentation

Submit written questions using the chat function



Please note the webinar is being recorded

Please complete the poll at the end of the webinar

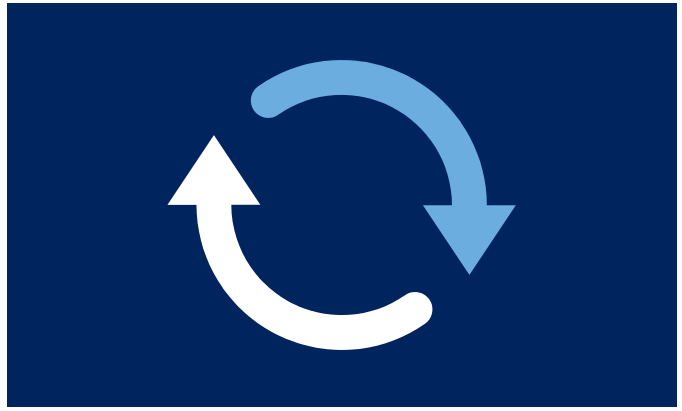
Agenda

Introduction to webinar

Background

Decarbonisation and DSO

Our DSO strategy documents



Consultation process

Questions

Q&A panel

Simon Brooke
Acting
Head of DSO
Transition

Ian Povey
Strategic
Planning
Manager

Background

UK is committed to achieve net zero by 2050

North West target is as early as 2038

Electricity use is forecast to double by 2050 as customers use more low carbon technologies ...

... and more customers connecting their own generation will have a dramatic effect on our network

It's our responsibility to provide the electricity network of the future

Our DSO strategy documents set out how we are preparing for net zero

Stakeholder engagement journey to DSO

Smart Grid Forum
2010-2015

"Flexibility is key to **affordable** LCT adoption"

Several public consultations

Flexible products and innovative solutions

(ANM, CLASS, C2C etc)

Ofgem call for standardisation

100,000's stakeholders and customers

Open Networks project
2017

DSO functions and principles are explored and defined

Several public consultations

Advisory panel (40)

Principles

Open

Practice neutral facilitation

Consistency between network operators

Core DSO functions defined

8 by Open Networks

19 by Ofgem

Formal position paper and consultation

Drivers for DSO documents and consultation

Focus on decarbonisation

Demonstrate stakeholder engagement and input

Clearer articulation of DSO strategy

Demonstrate how IT roadmap relates to DSO strategy

Demonstrate how our plans are joined up

How decarbonisation and DSO transformation fit together

Deliver net zero carbon

Stimulate LCT adoption

Facilitate LCT adoption

Do efficiently and timely

'Leading the North West to zero carbon' plan

DSO strategy

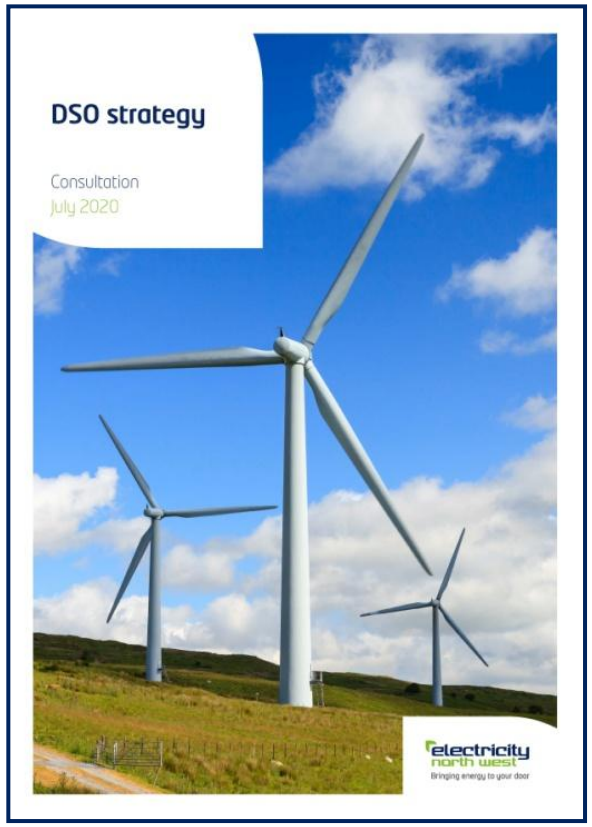
- Long term planning
- Operations, real time processes and planning
- Markets and settlements

Grid digitalisation & data strategy

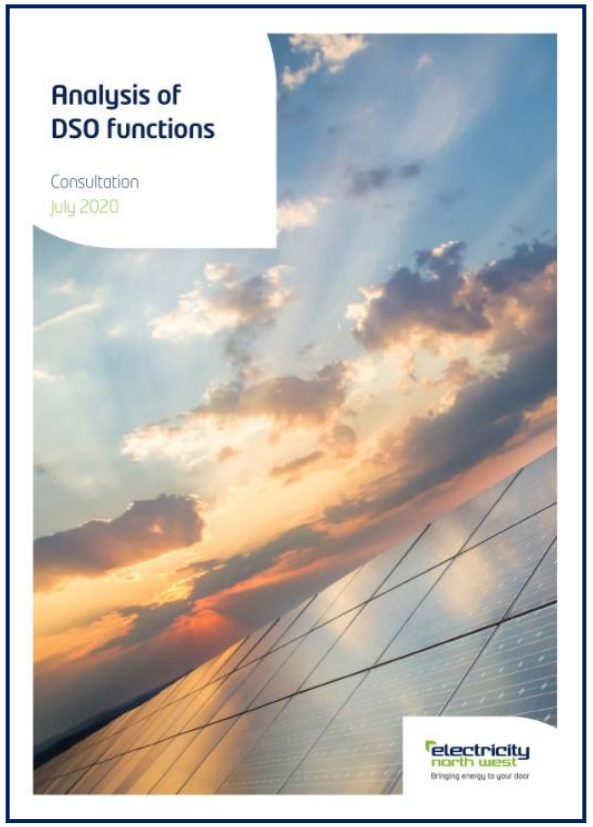
Cyber resilience strategy

Digital strategy consultation

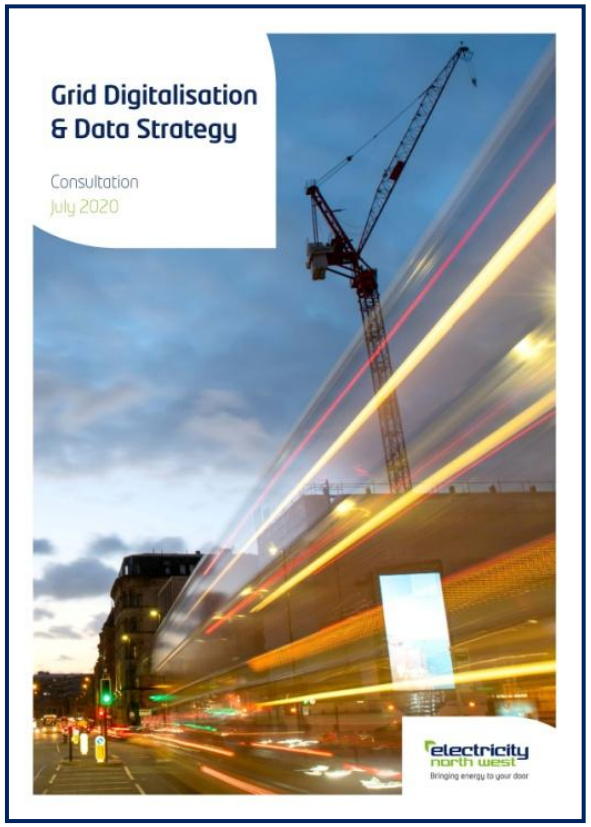
Our DSO strategy documents 2020



What we have achieved since publishing our last strategy and our future plans



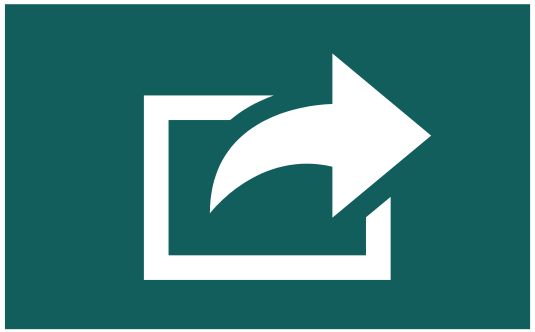
Analysis of Ofgem's 19 DSO functions and how our plans are aligned to them



How we will automate the network and facilitate the provision of data

DSO strategy

What we have achieved since publishing our last strategy and our future plans



The future

The scale of the challenge

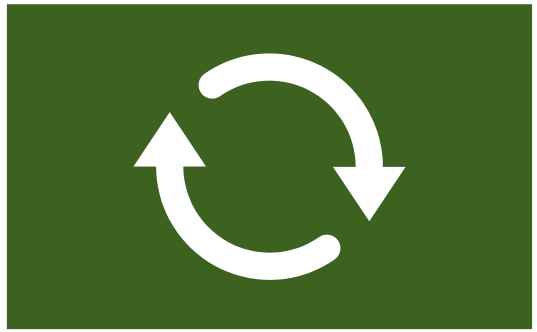
How we are predicting future uptake of low carbon technologies with forecasting tools

A national challenge

Industry approach to meeting future challenge

Government and regulatory input

Ofgem functions and enablers



A regional opportunity

Engaging with our stakeholders to understand their views and include their feedback

Our DSO guiding principles

Developed in conjunction with our stakeholders

Guide our latest strategy

DSO strategy – guiding principles

In our first DSO publication we identified six principles for guiding our approach to implementing DSO

DSO strategy demonstrates how we have kept the principles at the heart of delivering zero carbon electricity systems

DSO strategy – roadmap

2010 | 2015 | 2020 | 2025 | 2030 | 2035... | ...2050

DCPR5 | ED1 | ED2 | ED3 | ED4

External drivers

- **2012** First EV in North West
- **2016** 1.5GW renewables
- **2020** 200k EVs
- **2028** 2.3GW renewables
- **2029** 500k EVs
- **2038** GMCA decarbonise target
- **2050** UK decarbonise target

Customer information

- **2018** 1st DFES
- **2018** Powering the North West's future
- **2019** Carbon plan
- **2020** DSO update/ Digitisation strategy
- EV market participation
- Flexible heat market

IT, data & smart meters

- NMS
- **2020** NMS go live
- AMN
- **2021** AMN go live
- **2017** Smart meter ink to DCC
- **2024** Smart meter rollout complete
- IP-based device integration
- Flexible gas integration

Innovation

- **2012-2015** C2C project
- **2013-2015** CLASS project
- **2014-2018** Smart Street project
- **2018-2020** CLASS rollout
- **2020-2023** Smart Street IRM
- EV and heat market design
- Whole system ANM

Connections & flexibility

- **2016** 1st flexible connection offer
- **2017** Curtailment index
- **2018** 1st flexibility tender
- **2020** Heat maps
- Flexible connections BAU
- Automation connection design

Analysis of DSO functions

Analysis of Ofgem's 19 DSO functions and how our plans are aligned to them

Ofgem paper

August 2019

Consultation on key enablers for DSO

Functions and activities that will make up the role of DSO

Three themes

Long-term planning

Operations, real-time processes and planning

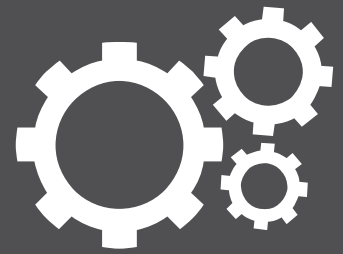
Markets and settlement

Review

Scope of 19 DSO functions

High level view on requirements to fulfil functions

Who is best placed to fulfil each function



In context

Cross-referenced against eight ENA Open Networks functions

Linked to future business plan for next price review

Ofgem's DSO functions – August 2019

Ofgem identified 19 distribution system operation functions (not operator)

Long term planning	Operations, real-time processes and planning	Markets and settlement
Network planning	Switching, outage restoration and distribution maintenance	Aggregation of DERs
Forecasting demand and generation and DER	Monitor parts of the Dx system under active network management	Design of principles of system access and trading arrangements
Connection studies and operation procedures	Supply of grid-operational services using DER assets	Operation of flexibility trading platforms and associated tasks
Integrated T-D planning	Supply of grid-operational services using DNO assets	
DER hosting capacity analysis	Identify DERs, ancillary service reqts. and operation restrictions	
Emergency response planning	Data management and sharing	
Delivery of new investment	Co-ordination between T-D interfaces	
DER net local value analysis	Co-ordination of DER schedules	

Existing

Extended

New

Function detail

Long term planning: Forecasting demand and generation and DER		
Function description	The forecasting of all demand, generation in and out of the network. This information is used to inform business plans, stakeholders, investment decisions, connections activities and system operations.	
Current activities	Since 2018 we have published an annual Distribution Future Electricity Scenarios (DFES) document. This provides regional insights into the potential changes in demand and generation across the distribution network based upon stakeholder engagement. We have implemented advanced forecasting tools developed through our innovation work on the ATLAS project, to produce highly accurate forecasts.	
Future position	• Utilising enhanced planning capabilities to improve modelling and forecasting capabilities. These enhanced capabilities will take into account: flexible connections, increasing variability in demand and generation profiles, utilisation of flexible services to provide network services and increasingly variable weather patterns • Systems we are developing will be capable of providing short-term (<48hr) demand forecasts which will anticipate network constraints. This knowledge can then be used to procure flexible services, manage network flows and prevent network overloads • Improvements in the ATLAS forecasting methodology to include reactive power forecasting and increased automation of long- and short-term forecasting processes. The forecasting system will also be fed with greater quantities of quality data to improve forecasts	
Digitalisation required/IT systems and support	• Enhanced network monitoring to provide greater data quality for analysis • Integration of smart meter data into corporate systems • Implementation of common data exchange protocols to share forecast data openly with stakeholders	
New or enhanced data required	• Smart meter data • Weather data • Forecasts of changes in: uptake of LCT connections activities, regional development plans, policy changes (regional, national and international) and long-term weather patterns	**Date(s)** ED1
Business process change required	• Carry out improvements in ATLAS forecasting methodology to include reactive power (Q) forecasting • Publish more detailed forecasts of power requirements for anticipated future flexible services requirements • Implement a common platform to allow customers to access forecast data in industry agreed standard formats • Automated integration of business and third party data sets into forecasting algorithms	ED1 and ED2

Estimated costs		RIIO-ED2 output areas
ED1	**ED2**	  
tbc	tbc	

Open Networks Project related DSO functions: Network Operation, Investment Planning, Connections and Connection Rights

Related to Open Networks Project products: 2018 WB1 P5 – Whole System FES, 2020 WS1B P5 – Whole Systems FES (Signposting of Potential Network Capacity Requirements), 2019 WS1B P2 – Whole Electricity System FES, 2020 WS1B P2 – Whole Systems FES (co-ordination of national and regional FES)

Grid digitalisation and data strategy

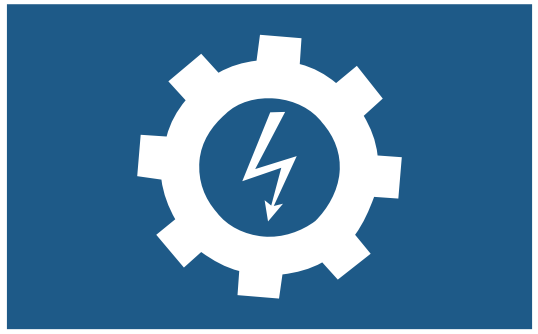
How we will automate the network and facilitate the provision of data

Smart grid vision

Benefits of a smart grid

Working with the Energy Data Taskforce

Transitioning innovation projects to BAU



Network control

Network management system

Innovation as business as usual

Active network management

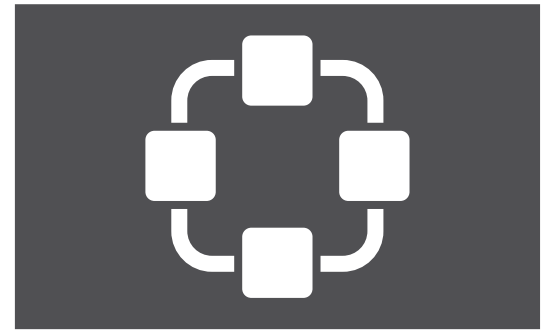
Customers

Flexible connections

Common industry format for data

Flexr project

Streamlining data exchange across the industry



The networks

Smart substations

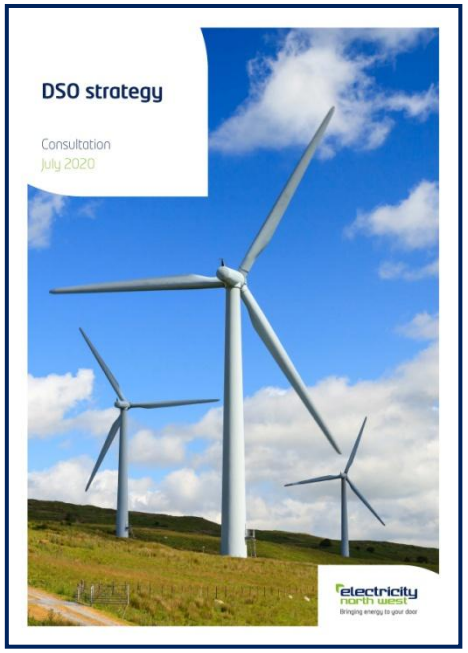
Monitoring the LV network

Increasing automation of HV network

Publication of network data

Other materials published

Distribution system operation



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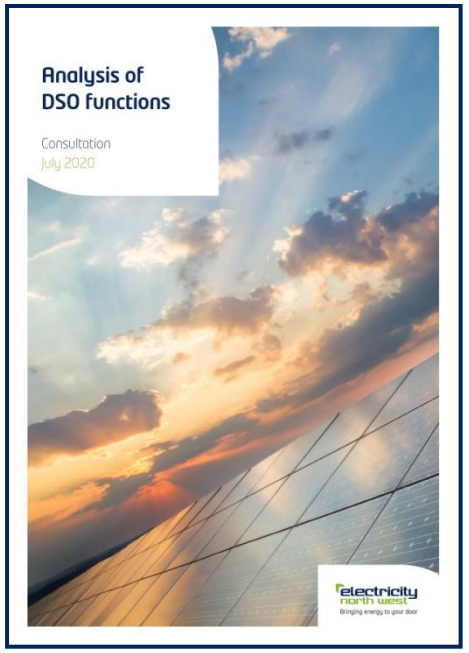

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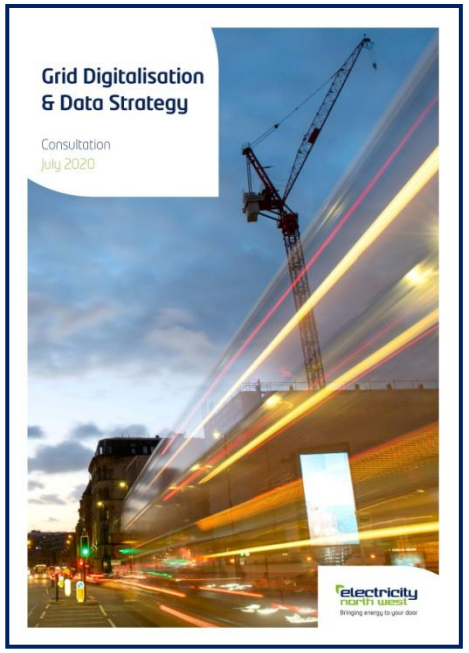
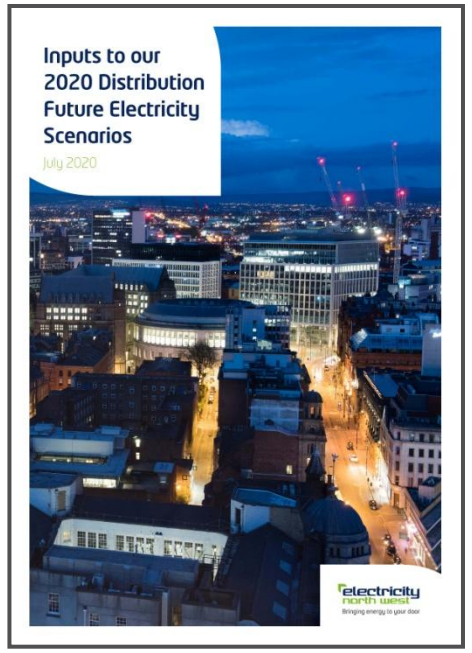


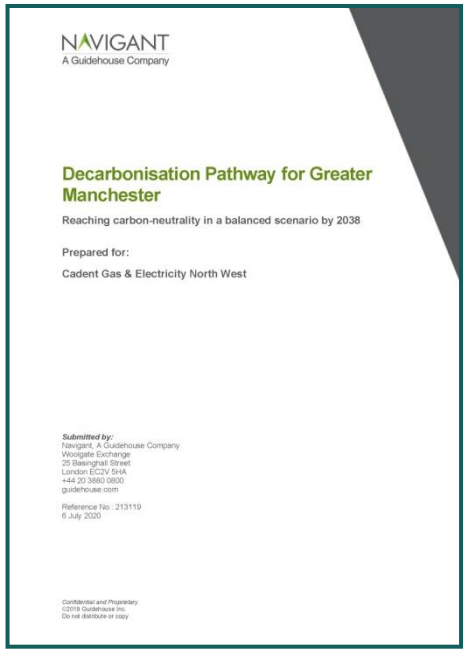
How we will automate the network and facilitate the provision of data

Distribution future electricity scenarios



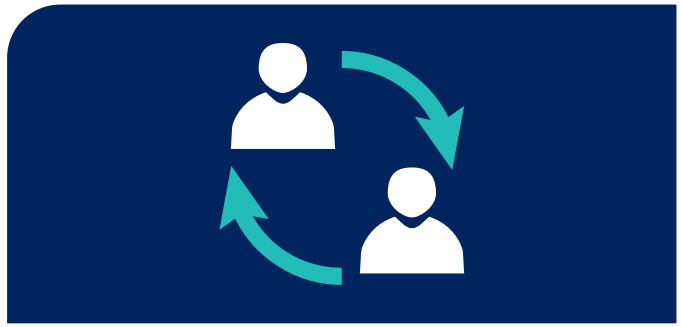
Overview of the inputs we will use to create the forecasts for our 2020 DFES

Decarbonisation pathways



Energy 'blueprints' for GM, Lancs and Cumbria, developed in conjunction with Cadent Gas

Our consultation

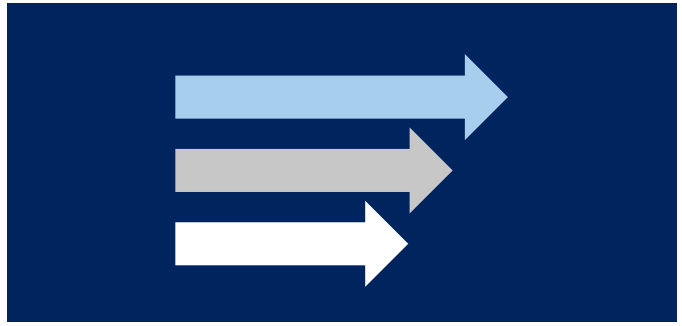


Consulting customers and wider stakeholders

We want to understand your expectations

Will our plans benefit customers?

Are our plans easy to understand?



Feedback will ensure we prioritise your needs

Revised version of the documents later this year

Consultation ends at 6.00pm on Wednesday 9 September 2020

Q&A panel

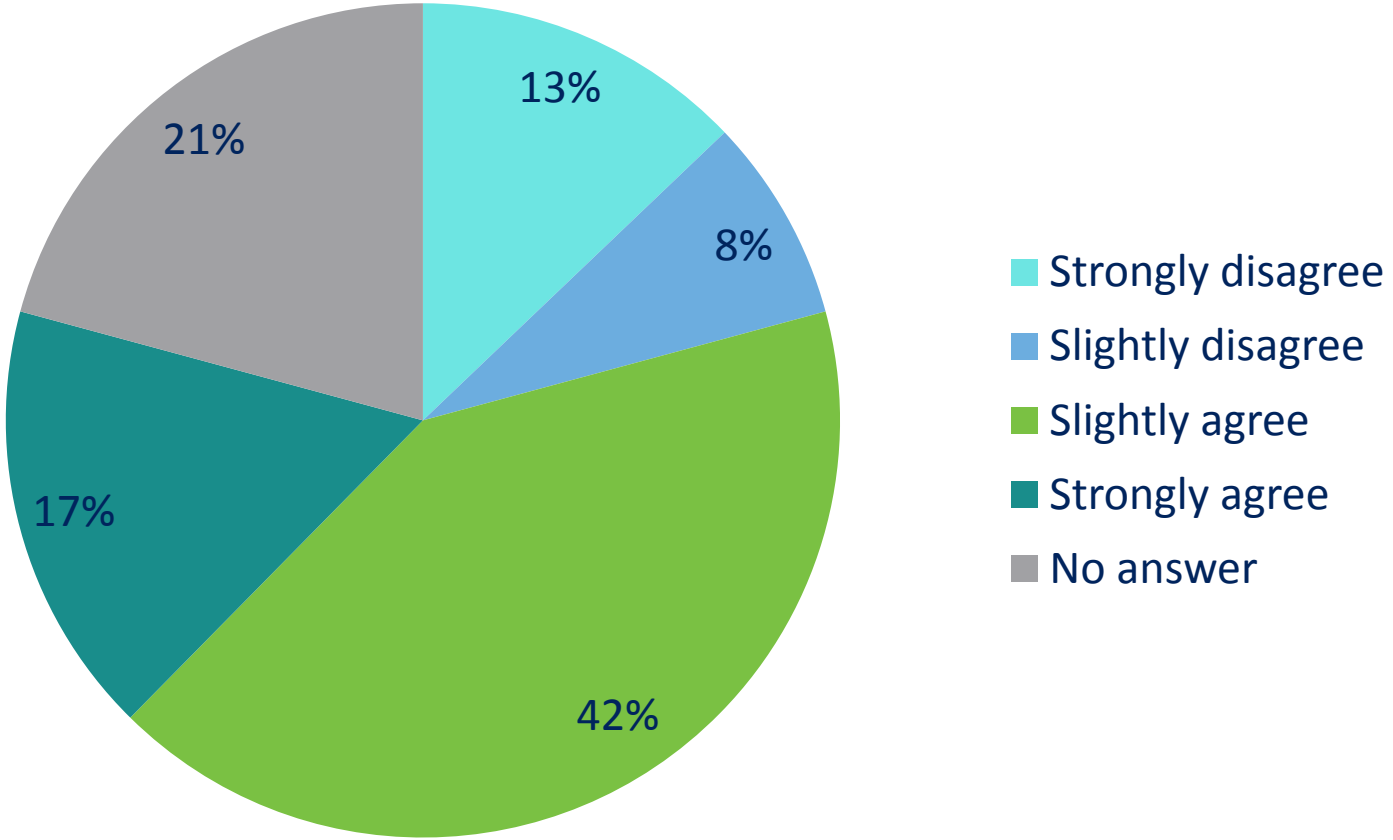
Simon Brooke
Acting
Head of
DSO Transition

Ian Povey
Strategic
Planning
Manager

Submit written questions using chat function

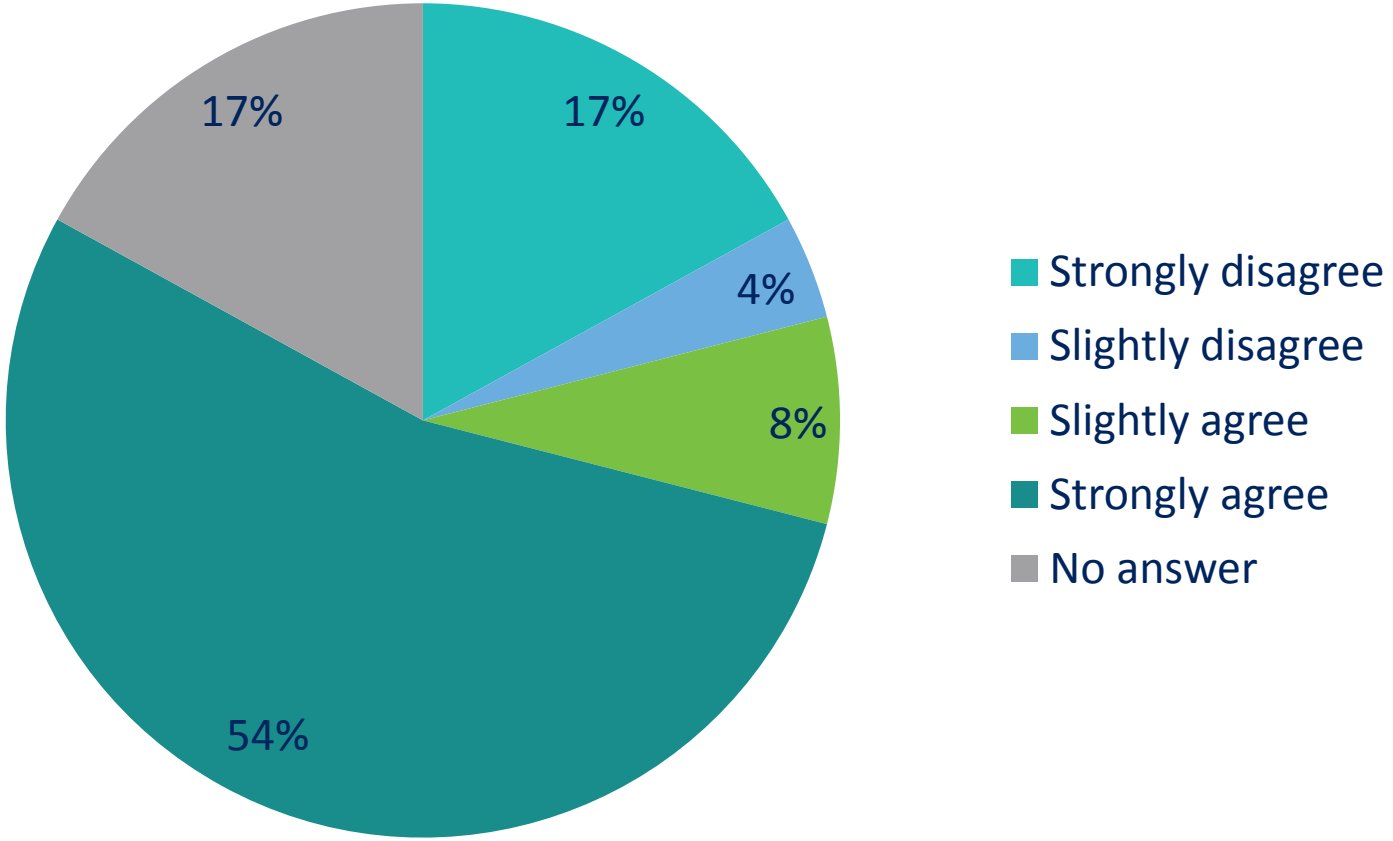
Post-webinar poll

Today's webinar was successful in raising my understanding of our DSO strategy and activities



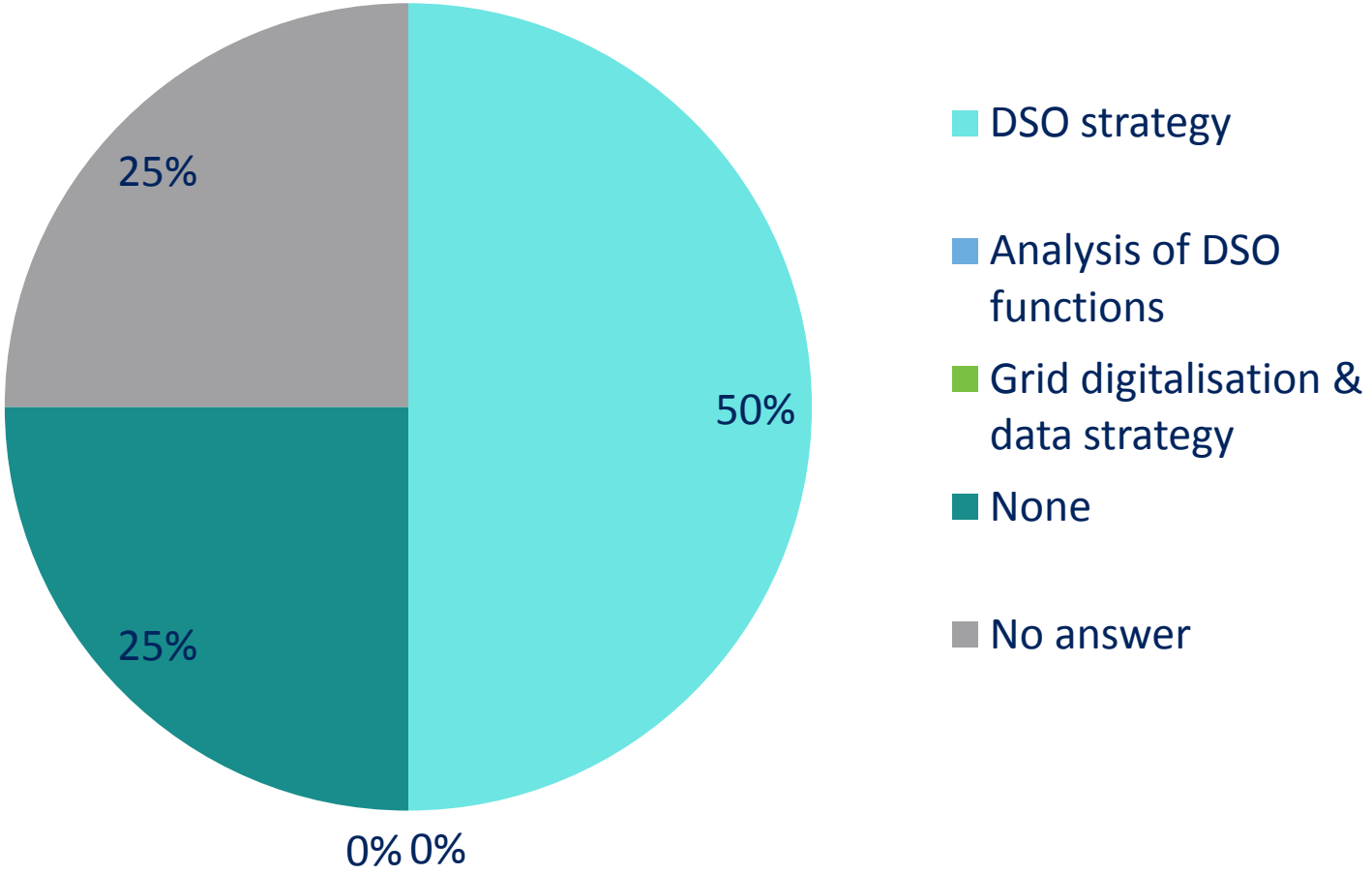
Post-webinar poll

I will take part in other webinars organised by Electricity North West to discuss the future of the electricity network



Post-webinar poll

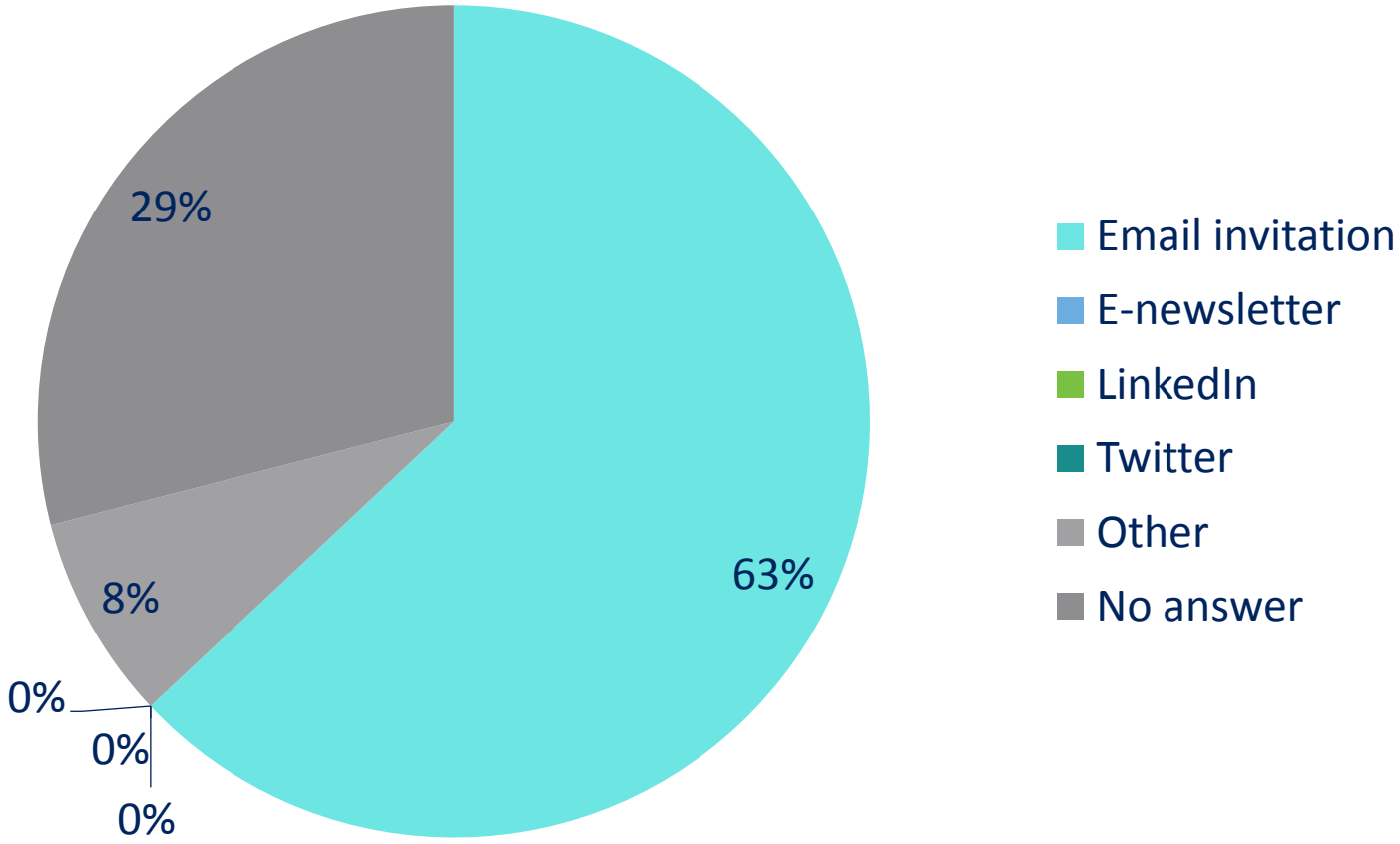
Which consultation surveys will you complete?



This question was set up incorrectly meaning only one option could be selected

Post-webinar poll

How did you hear about today's webinar?



Post-webinar poll

Do you have any comments or suggestions about how we could have improved today's webinar?

Perhaps a summary of the content of the three documents as I doubt many people had read all three, due to the volume.

As the documents cover only Greater Manchester, Lancashire and Cumbria, and not the boroughs in Liverpool City Region I am a little confused about why authorities in the LCR were invited to participate. The session has authorities area DSO focus.

Make the presentation even more basic so that non-technical participants can follow it!

It was only possible to select one of the consultations on Q3.

Mute all the participants at the beginning! Also possibly ask prior to the presentation if there are specific things participants would like to focus on, so more emphasis can be placed on those aspects. Request permission to share details of everyone on the call so people can get in touch with others if useful.

It's all at a very high level so difficult to get a grasp of it. We don't have the capacity to look at all the documents and comment in detail unfortunately.

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The consultation on our three DSO documents closes on Wednesday 9 September 2020