WESTERN POWER DISTRIBUTION

Serving the Midlands, South West and Wales

Connection Customer Steering Group

Tuesday 23rd October 2018

WESTERN POWER DISTRIBUTION
Serving the Midlands, South West and Wales

Agenda

10:10 – 10:40	Business update	Alison Sleightholm
10:40 – 11:15	ICE update and 2019/20 priorities	Richard Allcock
11:15 – 11:30	Coffee	
11:30 – 12:00	Open Networks	Nigel Turvey
12:30 – 12:30	DSO transition and flexibility update	Graham Halladay
12:30 – 13:15	Lunch	
13:15 – 13:45	Connections update	Tim Hughes
13:45 – 14:00	Summary, feedback and next steps	Richard Allcock

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CCSG Update

Alison Sleightholm
Resources & External Affairs Director
Tuesday 23rd October 2018

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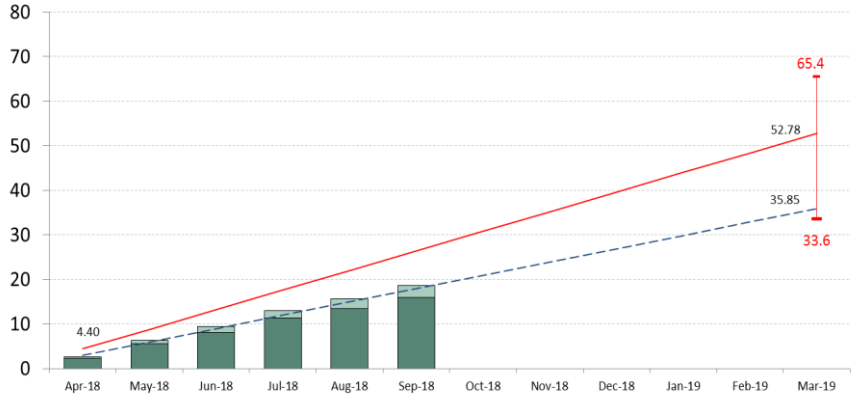
Topics for discussion

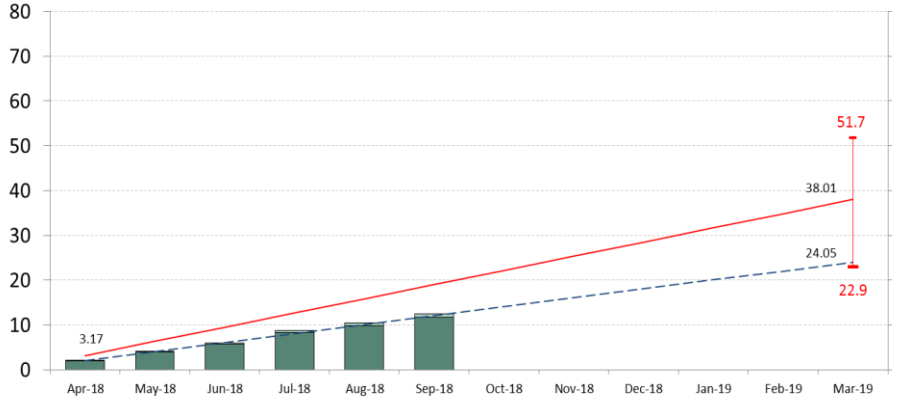
- **Business Update**
  - Operational
  - Regulation
  - Political climate
  - Engagement activity

Reliability – Customer Minutes Lost

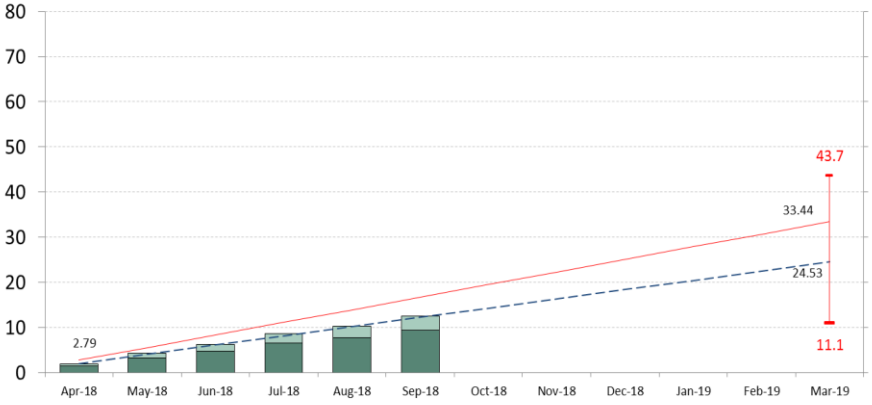
WPD West Midlands – CMLs per customer



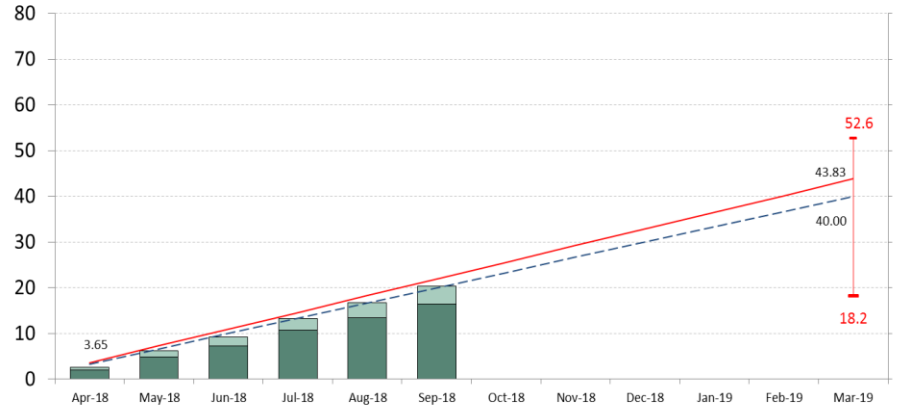
WPD East Midlands – CMLs per customer



WPD South Wales – CMLs per customer



WPD South West – CMLs per customer



Unplanned | Planned | IIS Exclusions | Ofgem target | Trended outturn | Max reward/penalty targets

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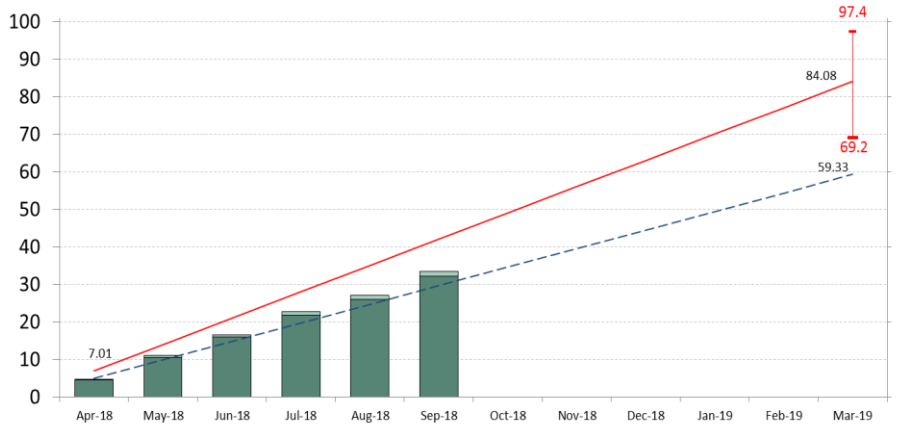
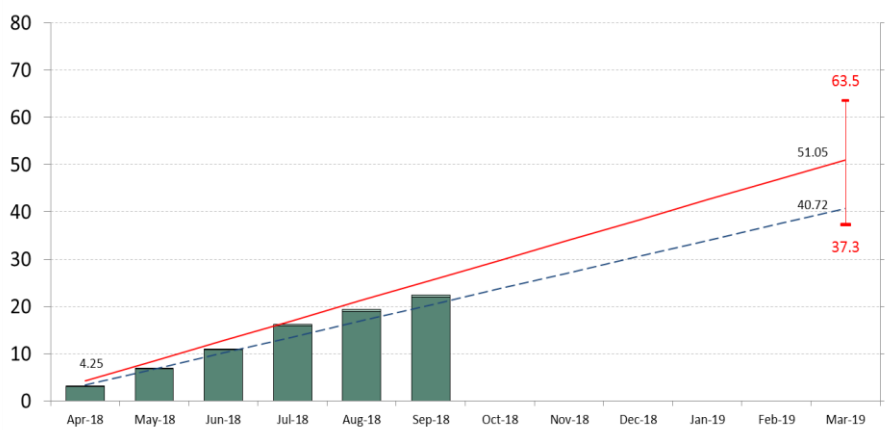
Reliability – Customer Interruptions

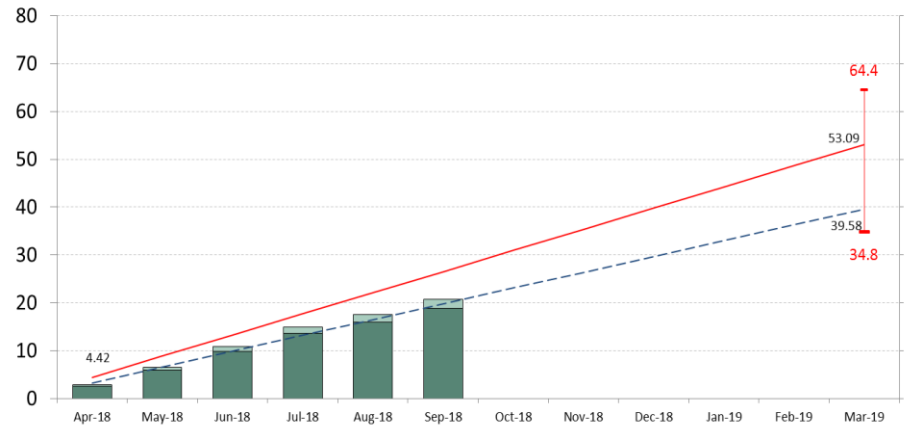
WPD West Midlands – CIs per 100 customers



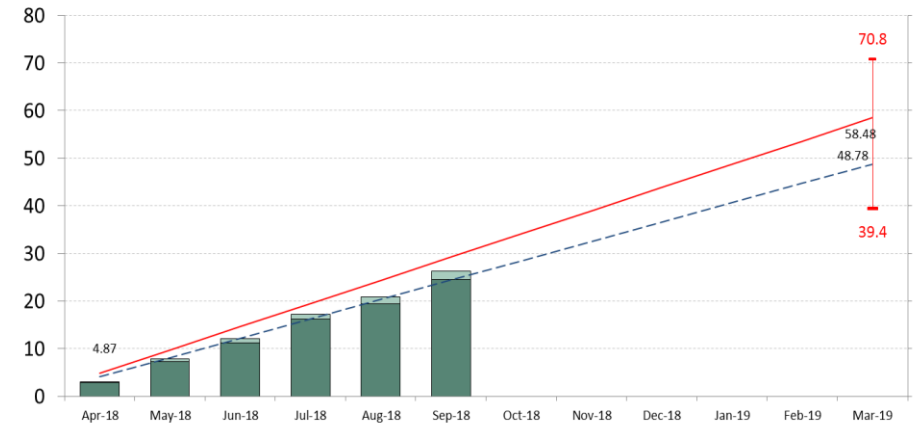
WPD East Midlands – CIs per 100 customers



WPD South Wales – CIs per 100 customers



WPD South West – CIs per 100 customers



Unplanned | Planned | IIS Exclusions | Ofgem target | Trended outturn | Max reward/penalty targets

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Potential IIS outturn 2018/19

	WPD West Midlands		WPD East Midlands		WPD South Wales		WPD South West	
	CI	CML	CI	CML	CI	CML	CI	CML
Ofgem IIS Target 2018/19	84.1	52.8	51.0	38.0	53.1	33.4	58.5	43.8
Potential IIS Outturn 2018/19	59.3	35.9	40.7	24.1	39.6	24.5	48.8	40.0
Potential % Out Performance	29.5%	32.0%	20.2%	36.7%	25.5%	26.6%	16.6%	8.7%
*Potential reward (£m†)	20.5		17.9		6.0		4.6	

Updated up to 30/09/2018

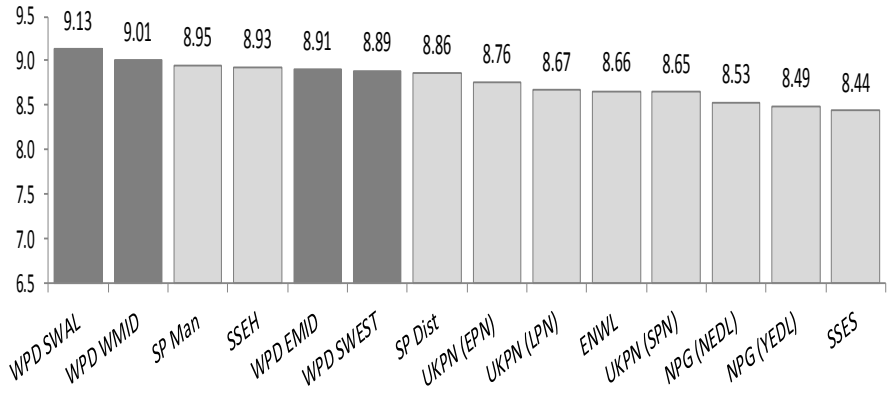
*Subject to Ofgem audit

†At 2018/19 prices

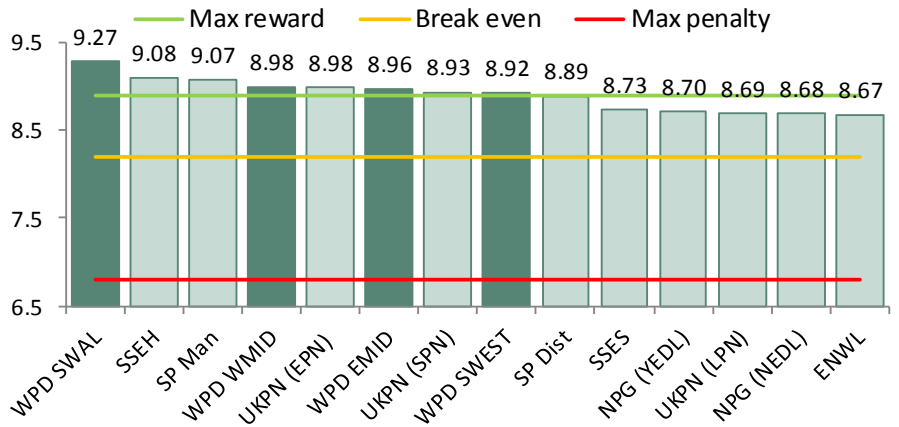
Broad Measure Survey

2018/19 regulatory year to date (August 2018)

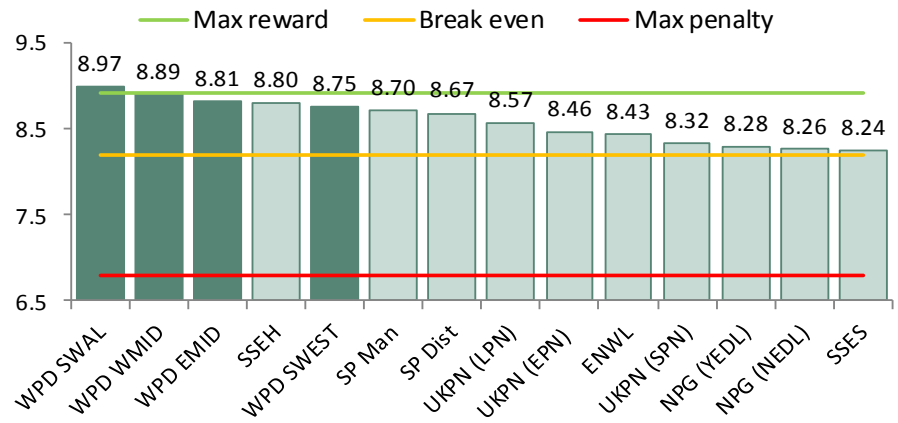
Overall Combined



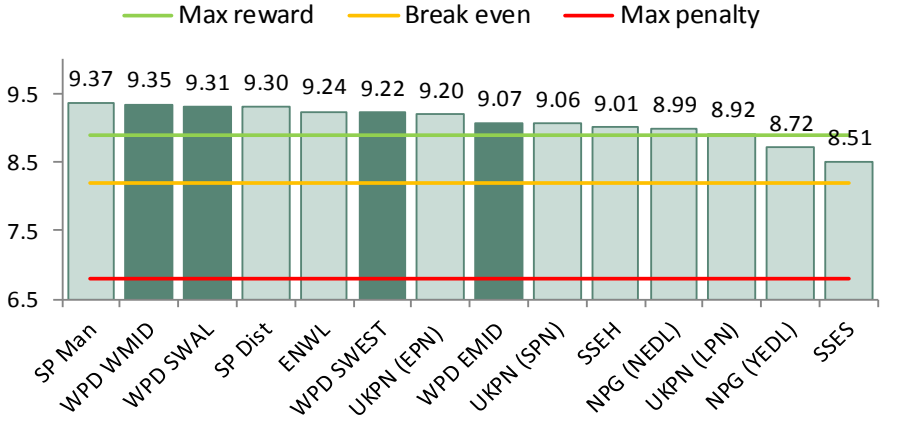
Interruptions



Connections



General Enquiries



Note: Ofgem's incentive only considers individual performance in the 3 categories. An overall score is generated for summary purposes, using Ofgem's weightings of : 30% Interruptions; 50% Connections; 20% General Enquiries

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On track revenues

By licence

	Total on-track reward/penalty		Breakdown			
	Amount (£m)	% of maximum	Power cuts*	*Including the following unsuccessful calls penalty	Connections	General Enquiries
WPD South Wales	**£2.20**	**100%**	**£0.70**	**-£0.00**	**£1.04**	**£0.46**
WPD West Midlands	**£4.64**	**100%**	**£1.39**	**-£0.03**	**£2.32**	**£0.93**
WPD East Midlands	**£4.31**	**93%**	**£1.39**	**-£0.02**	**£1.99**	**£0.93**
SSE Hydro	£2.13	92%	£0.70	-£0.04	£0.97	£0.46
WPD South West	**£2.89**	**89%**	**£0.93**	**-£0.01**	**£1.27**	**£0.70**
SP Manweb	£3.35	85%	£1.16	-£0.08	£1.38	£0.81
SP Distribution	£2.90	81%	£0.99	-£0.07	£1.22	£0.70
UK Power Networks plc (EPN)	£3.68	69%	£1.62	-£0.03	£1.01	£1.04
UK Power Networks plc (LPN)	£2.33	67%	£0.71	-£0.02	£0.92	£0.70
UK Power Networks plc (SPN)	£2.06	57%	£1.04	-£0.02	£0.32	£0.70
Electricity North West	£1.88	52%	£0.60	-£0.13	£0.59	£0.70
Northern Powergrid Northeast	£1.16	43%	£0.47	-£0.08	£0.11	£0.58
Northern Powergrid Yorkshire	£1.42	40%	£0.68	-£0.09	£0.21	£0.53
SSE Southern	£1.60	33%	£1.03	-£0.06	£0.14	£0.43

By DNO group

WPD	**£14.04**	**95%**
SP	£6.26	83%
UKPN	£8.06	65%
ENW	£1.88	52%
SSE	£3.72	52%
NPG	£2.58	41%

In 2018/19 prices

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RIIO-ED2 Update

- **RIIO-2 Framework Decision - published July 2018. Key decisions:**
  - Default 5 year price control
  - Enhancements to stakeholder engagement process
  - Early settlement to remain possible for ED only
  - Extended role of competition
    - Use transmission criteria of new, separable, high value projects (>£100m capex)
  - Other areas to be decided as part of sector specific consultations

- **RIIO-2 Business Plans Initial Guidance Document - published 28th September**
  - Ofgem proposing to consolidate existing six output categories into three new categories:
    - Improve the consumer and network user experience
    - Support the energy system transition
    - Improve the network and its operation

RIIO-ED2 Timetable

March 2018	RIIO-2 framework consultation
April 2018	RIIO-2 enhanced engagement guidance
July 2018	RIIO-2 framework decision
December 2018	GD2/T2 Sector specific methodology consultation
May 2019	GD2/T2 Sector specific methodology decision
Q3 2019	ED Open Letter
Q1/Q2 2020	ED Sector methodology consultation
Q3/Q4 2020	ED Sector methodology decision
Mid/Late 2021	Business Plan submission, analysis and determinations (Note that timetable for this stage will be determined through the earlier consultation and decision processes. It will be dependent on policy decisions in relation to fast-tracking and enhanced engagement)
Q4 2022	Statutory Licence consultation
Q1 2023	Licence decision
1 April 2023	Start of RIIO-2 price control for ED

Political Update

- Labour Conference
  - Manifesto commitment to bring infrastructure businesses into public ownership
  - Jeremy Corbyn emphasised cooperatives rather than nationalisation in his closing speech
  - Proposed “inclusive ownership fund” responsible for distributing shares of the companies’ dividend profits to all workers, up to a maximum of £500 per employee

- Conservatives
  - Emphasised the importance of capitalism, presenting themselves as the party of business
  - Highlighting the welcome need for investment
  - NIC review of regulation

WPD Political Engagement

- WPD have good relationships with local Members of Parliament and key policy makers based on an enduring annual programme that develops trust

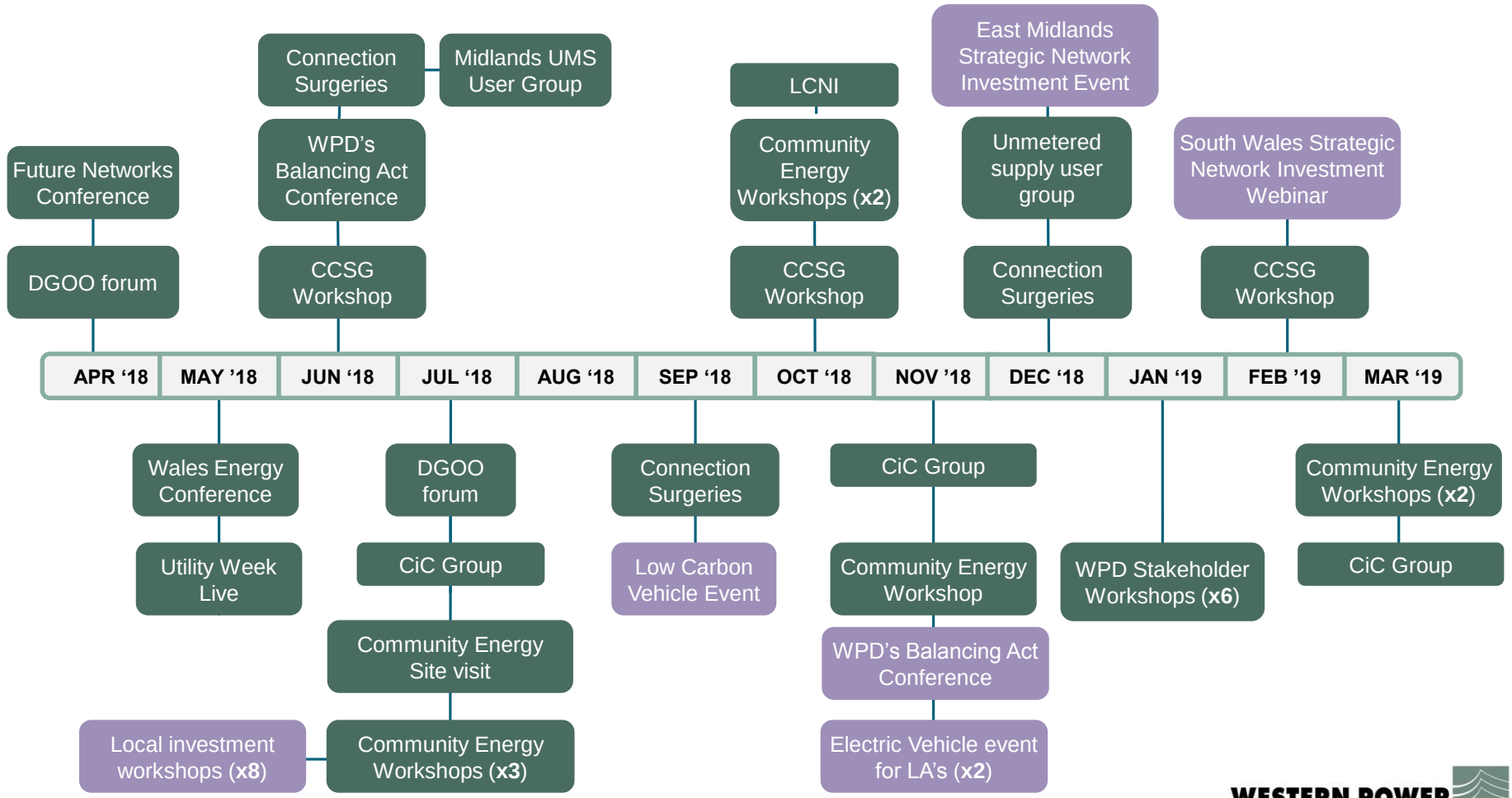
- UK networks are acknowledged as performing well at a low cost to end users
  - High levels of investment in the future
  - Responding to the smart future

- WPD is the only DNO to publish RIIO accounts – tackling erroneous claims regarding profit

- "*Bringing infrastructure into public ownership*" is a great headline but contact with policy makers reveals little detail

Connections Engagement Plan 2018/19

We have an extensive range of engagement activity planned throughout 2018/19. Some of the key activities we have planned are set out below. We have expanded our engagement activity further with key activities added since the start of the year highlighted In purple



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Connections engagement

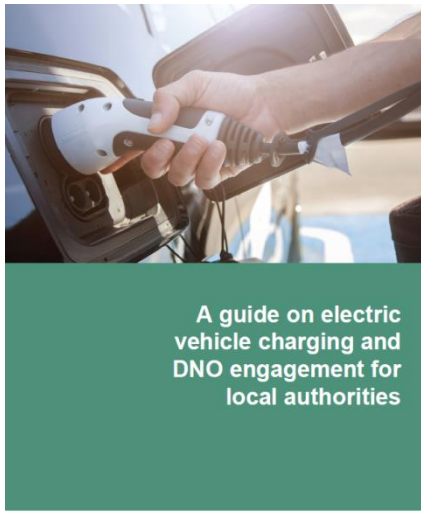
We are continuing to expand our engagement activities with connections stakeholders, ensuring we share knowledge and gather feedback on emerging priorities

WESTERN POWER DISTRIBUTION INNOVATION

Future Networks – A Balancing Act
21st November 2018
The Bristol Hotel, Bristol

Electric Vehicles

- We have identified electric vehicles (EVs) as a priority area and have increased our engagement activity in this area:
  - Low Carbon Vehicle Event – industry event, Sep 2018
  - Balancing Act Conference looking at EVs – 21st Nov 2018
  - Local Authority EV events – 2 x workshops Nov 2018
- We have also included EVs in other events with a broader connections agenda such as our local investment workshops and are producing guidance documents on EVs.



UKEVSE

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Connections engagement

Community energy

- Community energy (CE) remains a key area of engagement for WPD
  - ENA Community Energy events – x2 Sept 2018
  - WPD Regen Community Energy: The Next Generation events – x3 Oct & Nov 2018

- We have undertaken a consultation to engage communities on DSO transition and flexibility aiming to:
  - Support CE to develop knowledge about our changing energy system and encourage informed participation
  - Find out their thoughts and future energy plans
  - Inform WPD ongoing engagement and support for CE
  - Ensure WPD's vision for DSO aligned with needs of CE
- We aim to publish a report in November with actions as a result of this feedback

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ICE Update

Richard Allcock

Connections Policy Engineer

Tuesday 23rd October 2018

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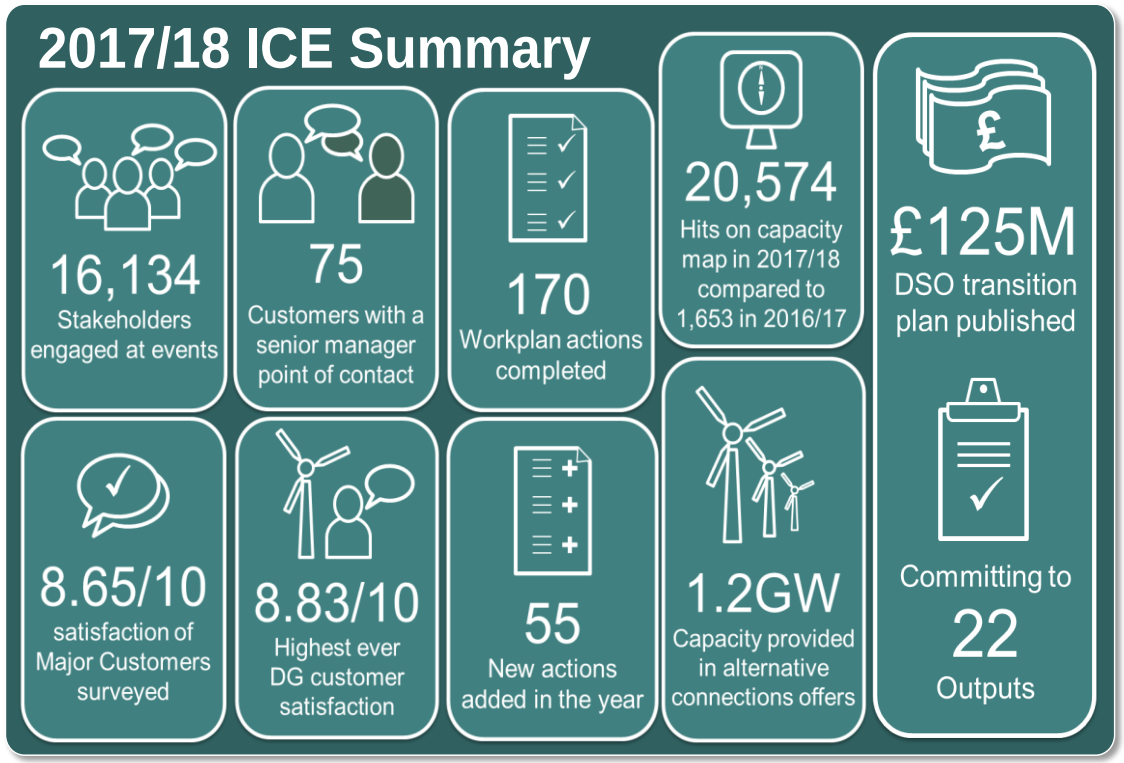
ICE update

Recap

WPD submitted ICE looking forward and back reports to Ofgem and published them on the WPD website. They contain:

- 2017/18 Looking back report setting out the engagement undertaken and details of initiatives delivered
- 2018/19 Looking forward report setting out how we have developed our ICE workplan and our planned engagement activity for the year
- Details of our stakeholder engagement strategy, approach and methods
- Appendices with detailed 2017/18 plan and KPI updates, plus 2018/19 workplan



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Ofgem ICE consultation and assessment

- In June 2018 Ofgem consulted with stakeholders on how well DNOs had engaged with connection stakeholders and delivered on their requirements under ICE
- They received 58 responses from 26 different organisations (7 responses were regarding WPD) and published them on their website
- Ofgem undertook further fact-finding with DNOs to assist with their assessment of whether the DNOs had met the minimum ICE criteria
- Following their assessment Ofgem have considered that each DNO has **met the minimum criteria** and they **will not consult on penalties** and decision letter published 17th October 2018.
- Therefore WPD have 'passed' the ICE incentive for 2017/18
- Feedback from stakeholders to Ofgem should be taken into account by DNOs in the ICE activities

Ofgem ICE assessment

Ofgem decision letter

- Overall assessment that feedback on DNO performance was positive with majority of respondents satisfied, although some areas of concern were identified:

– Engaging with stakeholders that use third parties to connect: ensuring using a 3rd party does not exclude stakeholders from DNO engagement

  – WPD engagement strategy is designed to reach broad range of stakeholders and methods such as our workshops and senior manager points of contact enable us to reach these stakeholders

– Assessment & Design Fees: effectively engage on implementation and improve information available pre-application

  – WPD have a new initiative to review A&D fee implementation and a range of initiatives to improve information and guidance we make available through capacity maps and online applications

– Proportionality: Ofgem restated that they consider the ICE process to be proportionate and that they will take all concerns raised by stakeholders seriously, including where a single stakeholder has an issue which may only affect them.

WPD ICE October Re-Submission

Re-submission

- At the end of October we will publish and submit to Ofgem our updated ICE report providing stakeholders and Ofgem with information on the progress WPD has made against our planned activity as well as any new activities we are undertaking.
- We will provide updates on new engagement activities such as our electric vehicle events
- The report will include progress updates on the ICE Workplan initiatives, out puts and measures along with the new initiatives we have added to the original workplan
- New initiatives include:
  - Increasing engagement and information for Electric Vehicles
  - Reviewing implementation of A&D Fees, working with ENA on best practice
  - Engagement and guidance on ENA Engineering Recommendation G98 and G99 for the Connection of Generating Plant to the Distribution System

2019/20: Our next ICE Workplan

Identifying priority areas for our 2019/20 ICE Workplan

- We are starting to identify the priority areas our Stakeholders want us to address in our next ICE Workplan
- Our ongoing engagement is identifying similar themes, with an increased focus on future networks: DSO transition, flexibility, availability of network capacity and electric vehicles.
- We will be using our stakeholder engagement over the coming months and to identify priorities and actions

We are seeking CCSG member's views on the priorities which WPD should be focussing on to ensure we are undertaking the appropriate initiatives to deliver for our stakeholders

Recap: ICE 2018/19: key priorities

These headline priorities which were identified for our current workplan are likely to remain key areas for next year

- **Transition to DSO**
  - Tailored engagement, signpost flexibility services, collaborate with network and system operators
- **Availability of information**
  - Additional layers and detail on outages, constraints and capacity maps
- **Network capacity allocation and reservation**
  - New policies and procedures, strategic investment and forecasting.
- **Competition in connections**
  - Continue development and delivery of improvements

Overarching priorities:

- **Improving customer service** - which applies across our ICE initiatives
- **Improving consistency** - key consideration when developing and implementing initiatives

The CCSG is a vital source of connection stakeholder priorities and improvement areas. What are your key priorities and are there other areas WPD should be focussing on?

Priority areas for our 2019/20 ICE Workplan

We have identified the following headline priority areas for next year using the feedback from stakeholders up to now. Are these the correct priorities and which are most important to you?

Rank	Key connections priority
	Transition to DSO
	Availability of Infomation
	Network capacity allocation and reservation
	Competition in Connections
	Electric Vehicles
	Assessment & Design fees
	Other (please specify):

ICE next steps

- WPD will publish and submit an update on our 2018/19 ICE Workplan at the end of October
- At the February CCSG we will present the refined ICE priority areas and outline the initiatives for the next ICE workplan.

Please include your comments and suggestions on the feedback form provided

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Coffee

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Open Networks

Nigel Turvey
Network Strategy & Innovation Manager
Tuesday 23rd October 2018

The Voice of the Networks

Energy Networks Association

Open Networks Project Update and Key Themes

October 2018

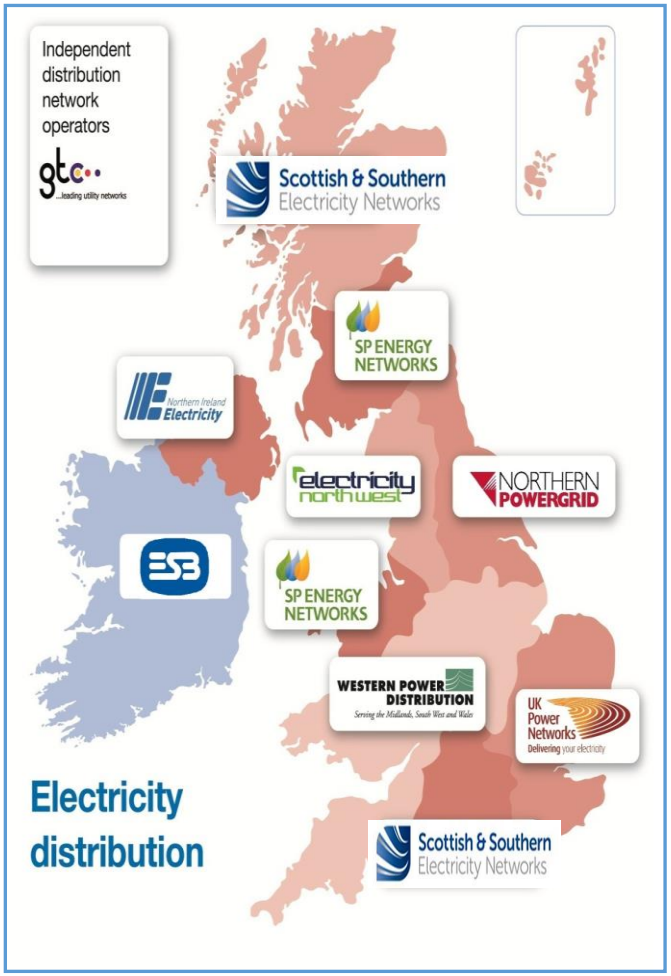
Open Networks - Introduction

ENA's Open Networks Project is a major energy industry initiative that will transform the way that both local Distribution Networks and national Transmission Networks will operate and work for customers.

The Open Networks Project will help customers connect and realise value; as well as reducing cost for consumers through more cost effective planning and more efficient use of distributed energy resources.

The Open Networks Project is a key initiative to deliver Government policy set out in the Ofgem and BEIS Smart Systems and Flexibility Plan, the Government's Industrial Strategy and the Clean Growth Plan.

Collaborating Members



Stakeholder Engagement

Thus far, we have undertaken with the Advisory Group:

8
Advisory Group Meetings

5
Advisory Group Modelling Workshops

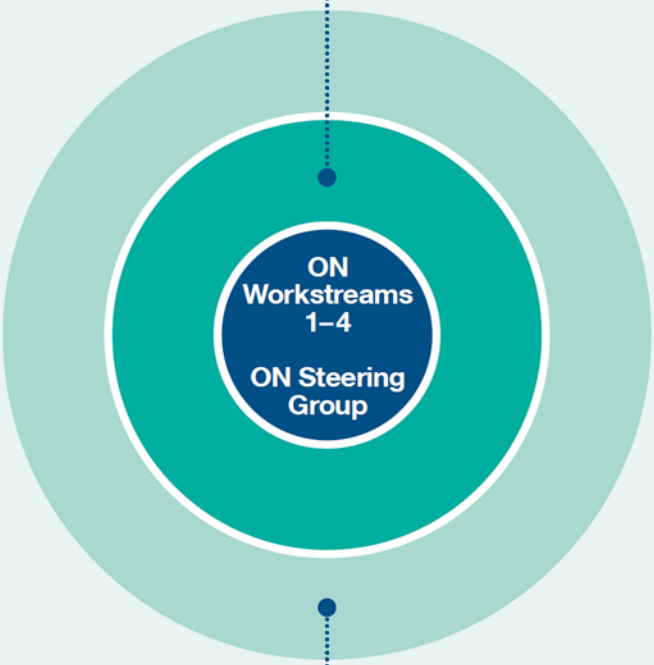
40
With over 40 different stakeholder attendees at these sessions

To the wider stakeholder community, we have:

Undertaken 4 consultations & planned another 2

Published our material on ENA website

4 webinars and 2 focus groups completed with stakeholders

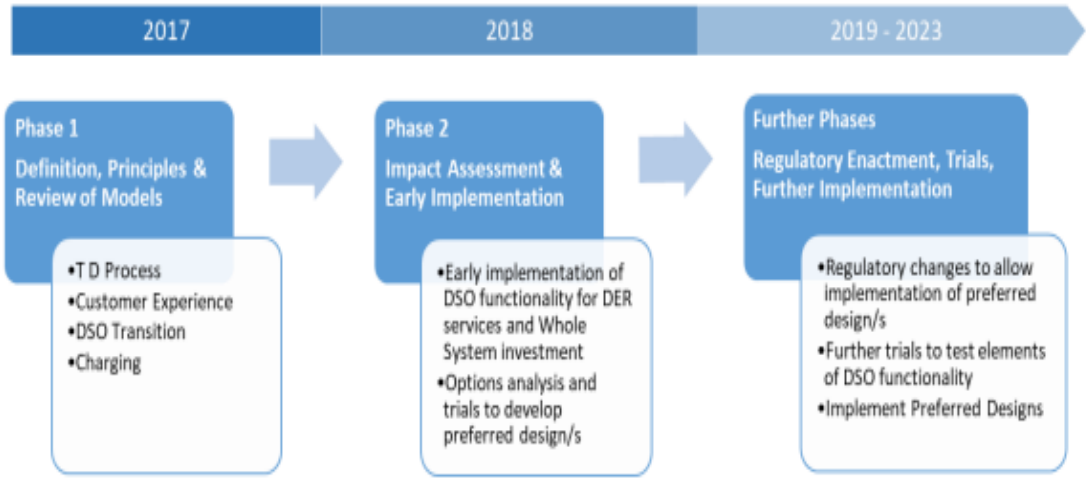


Email us to receive newsletters and project communication

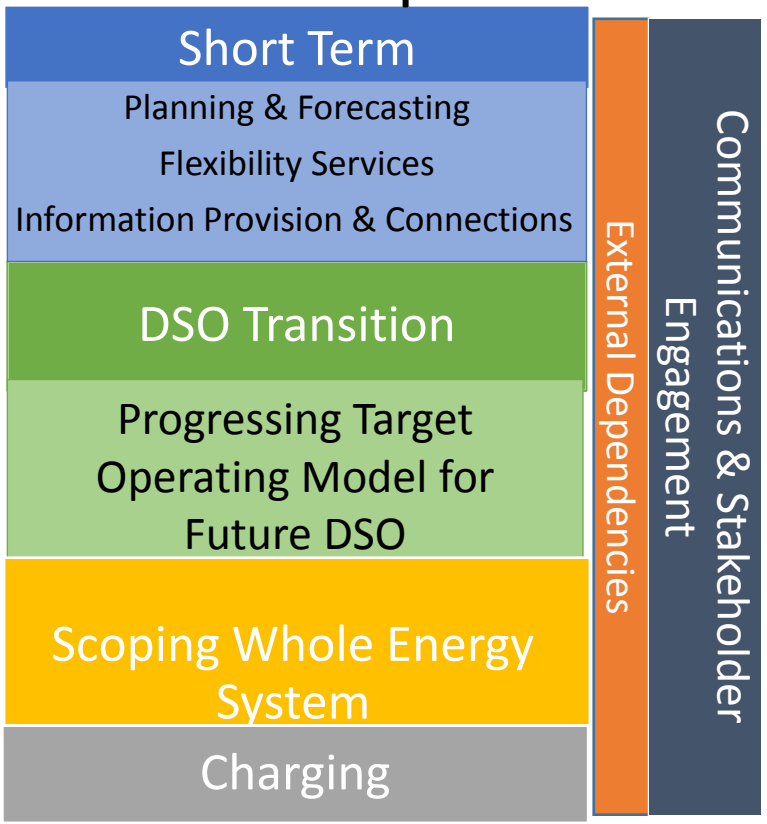
opennetworks@energynetworks.org

Project Development

Phased Development



2019 Workplan



Key Themes for Open Networks Development

- Opening Markets for Flexibility Services
- Transition to Future Worlds for Distribution System Operator
- Improving Connections Processes & Information Provision for Customers
- Delivering Whole System Processes to reduce cost for consumers

The Voice of the Networks

Energy Networks Association

Opening Markets for Flexibility Services

Opening Markets for Flexibility services

- National Grid ESO existing market for balancing services
  - Development of System Needs and Product Strategy (SNAPS) to rationalise and improve services
  - Consideration of Exclusivity of Balancing Service Contracts
- DNOs offer flexible connections in areas of constraint to help connect customers
- DNOs openly testing the market for flexibility services to compare with relevant reinforcement

Opening Markets for Flexibility Services

It is a key principle that any party executing DSO functions must act as a neutral market facilitator for flexibility services.

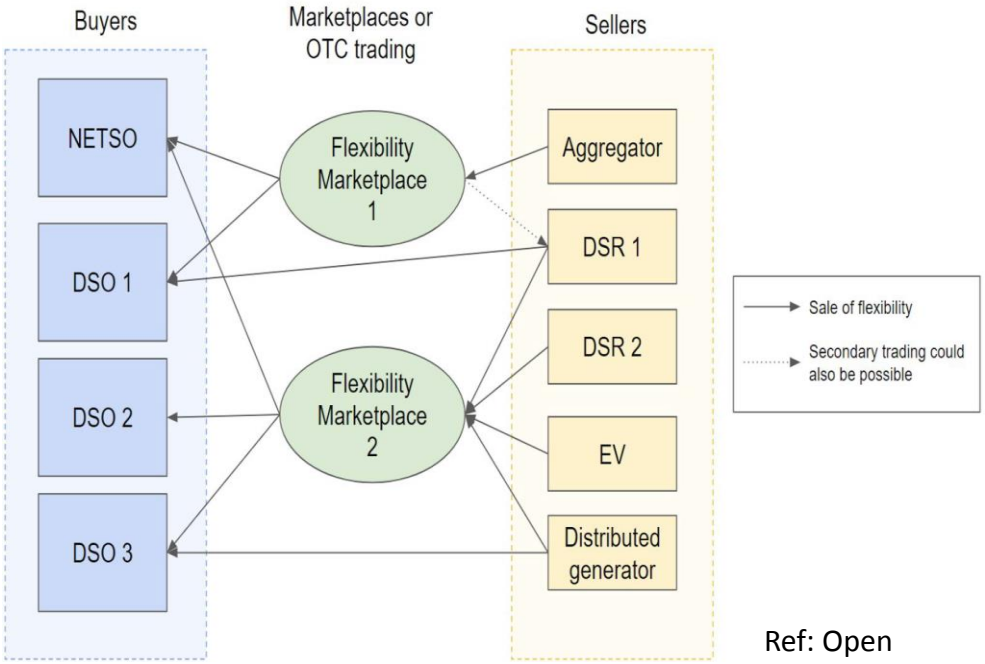
We can make things easier for customers who may want to participate by setting some standardisation for:

- Definition of DSO services
- Procurement processes
- DSO Market platforms/interfaces

Open platforms will facilitate

tertiary markets, e.g.:

- Peer to Peer trading; marketplaces
- Aggregation
- Community service provision



Ref: Open Utility Piclo

DSO DER Services

- Open Networks has defined a set of services for procurement
- Target to standardise and simplify services and procurement processes to make it easier for customers to engage

Service Characteristics	Scheduled Constraint Management	Pre-fault Constraint Management	Post-fault Constraint Management	Restoration Support
When to act	Pre-fault	Pre-fault	Post-fault	Post-fault
Triggering action	Time	DSO forecast; or Asset Loading	Network Fault	Network Fault
Certainty of utilisation	Very certain	Uncertain	Uncertain	Very uncertain
Efficiency of utilisation	Low	Medium	High	Low
Risk to network assets	Low	Medium	High	Low
Frequency of use	High	Medium	Low	Low

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Energy Networks Association

Transition to Future Worlds for DSO

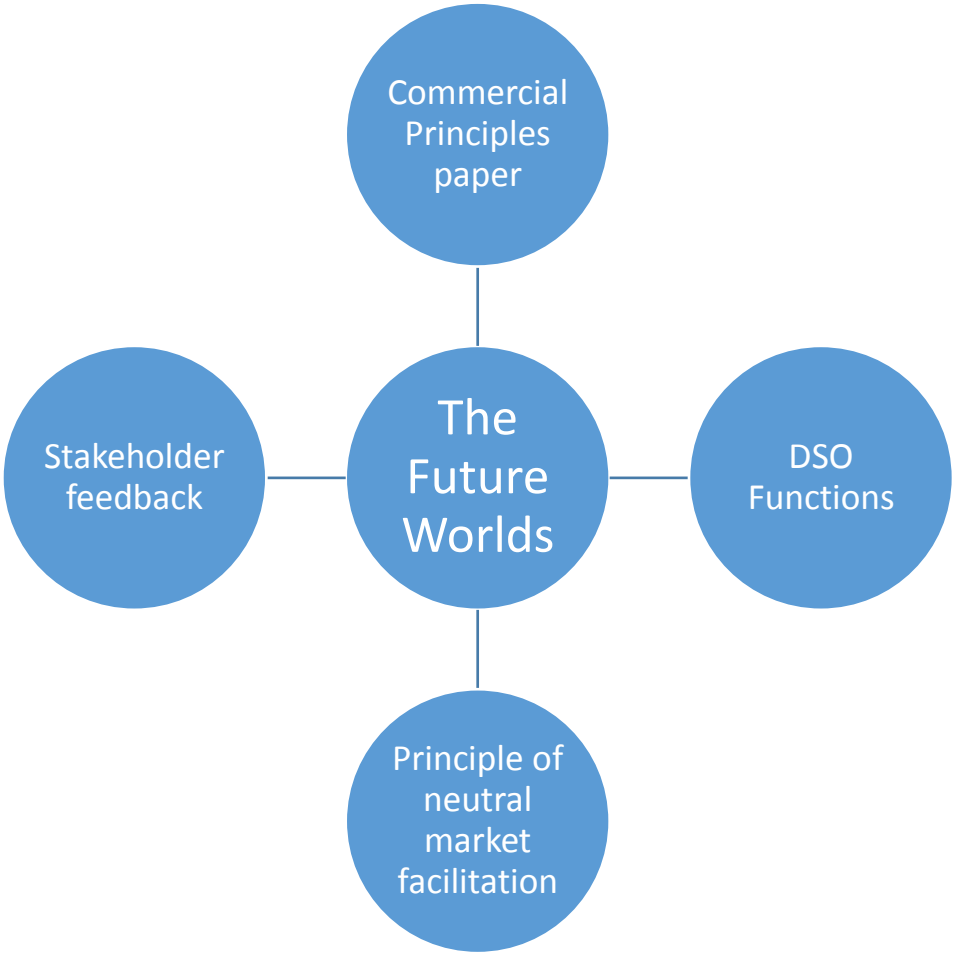
Developing Potential Future Worlds

The Future Worlds have been developed from other Open Networks products;

- The market models described in the 2017 Commercial Principles paper
- The DSO functions and activities
- The principle of neutral market facilitation

We have also used stakeholder feedback from;

- The Commercial Principles paper
- The 2018 Open Networks work programme
- A series of industry workshops



Five Future Worlds

World A
DSO Coordinates – a World where the DSO acts as the neutral market facilitator for all DER and provides services on a locational basis to National Grid in its role as the Electricity System Operator (ESO).

World B
Coordinated DSO-ESO procurement and dispatch – a World where the DSO and ESO work together to efficiently manage networks through coordinated procurement and dispatch of flexibility resource.

World C
Price-Driven Flexibility – a World where changes developed through Ofgem's reform of electricity network access and forward-looking charges have improved access arrangements and forward-looking signals for Customers.

World D
ESO Coordinate(s) – a World where the ESO is the counterparty for DER with DSO's informing the ESO of their requirements.

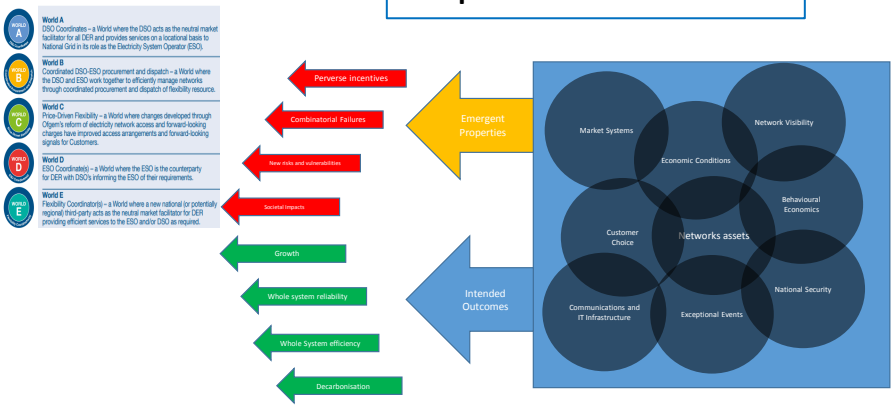
World E
Flexibility Coordinator(s) – a World where a new national (or potentially regional) third-party acts as the neutral market facilitator for DER providing efficient services to the ESO and/or DSO as required.

Update on Consultation Responses

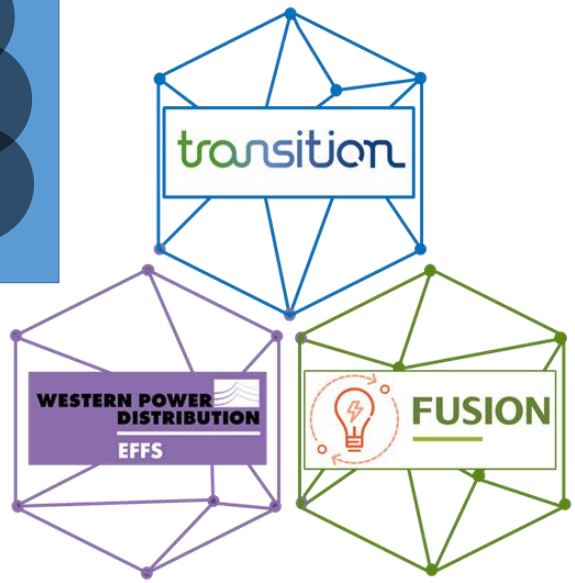
- 47 Consultation Responses under analysis from:
  - Suppliers
  - Generators
  - DNO/DSOs
  - ESO
  - iDNOs
  - Aggregators
  - Trade Bodies
  - Consumer Protection Parties
  - Local Energy Schemes
  - Equipment Manufacturers
  - Consultants
  - Settlement Agent
  - Other Interested Industry Parties

Future Worlds Development and Trialling

Impact Assessment



Trials



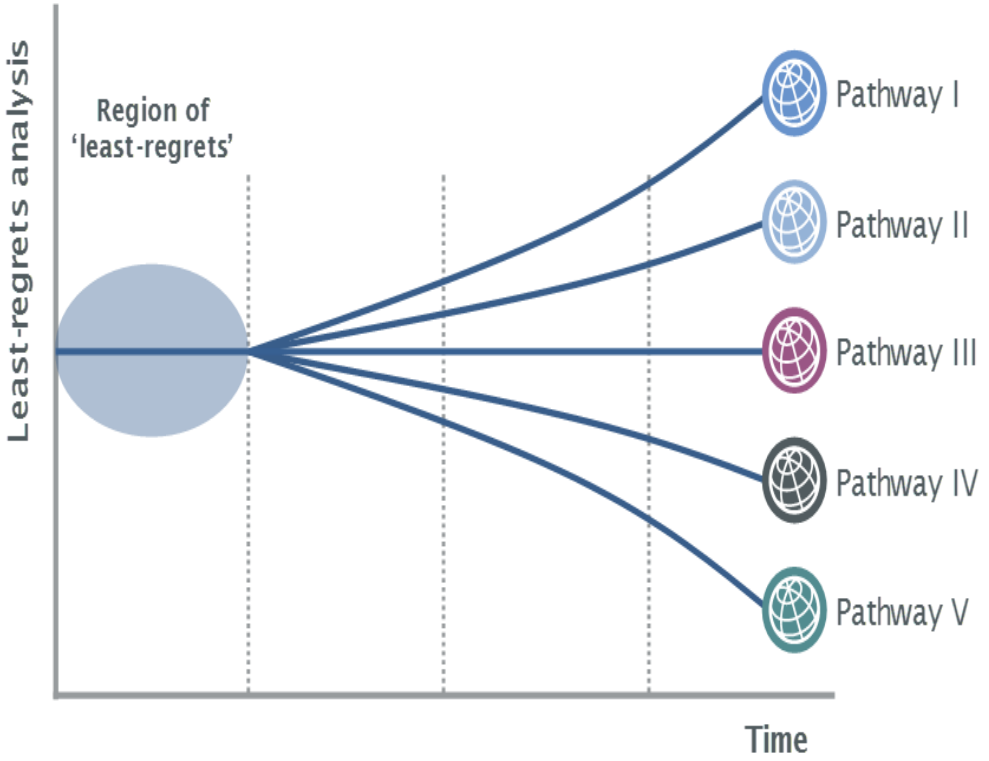
Future DSO World delivering on intended outcomes

- Reward those that have flexible demand
- Stimulate markets
- Maximise the utilisation of the network
- Deliver efficient & economic investment
- Digitise the Energy System
- Enable Community energy trading
- User pays
- Promote competition between DNOs

Development over Time

Least Regrets Analysis

- Assessment of the five future worlds has identified areas of common functionality between the worlds
- These confirmed our 2018 activities were appropriate and working towards DSO Transition
- These are included for consideration/prioritisation in our 2019 Workplan



The Voice of the Networks

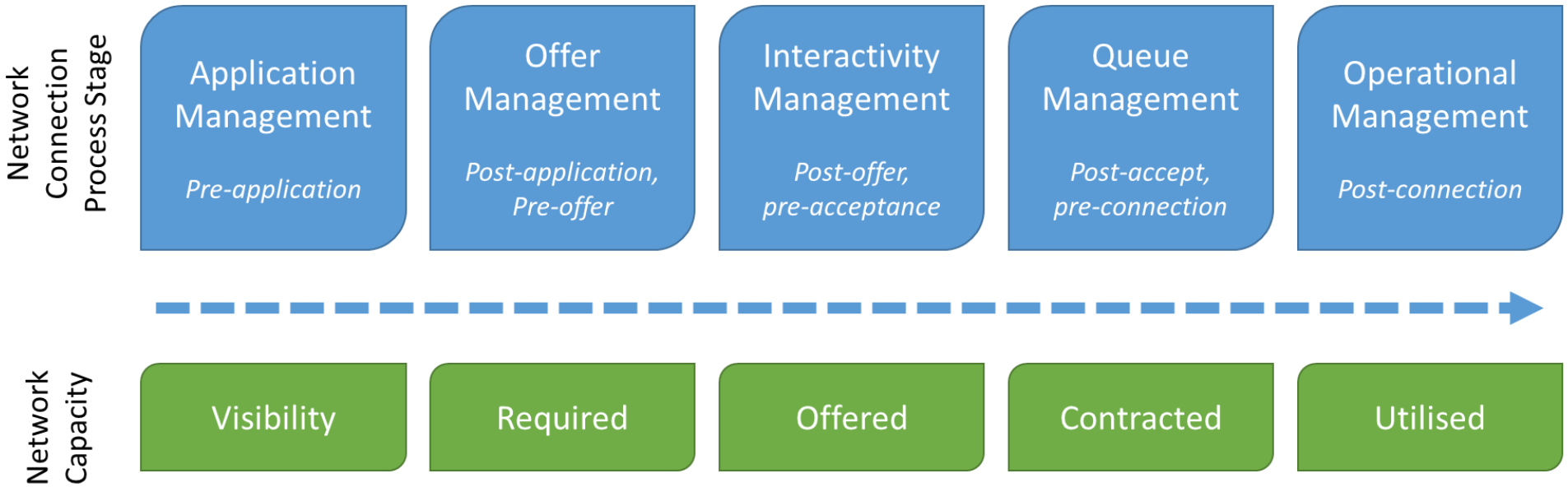
Energy Networks Association

Improving Connections Processes & Information Provision for Customers

Improving Customer Processes – 2018 themes

- Baselining understanding on delivery of today's services
  - Recognising changes taking place with transition to DSO (e.g. flexibility services)
  - Enabling comparison through highlighting good practice
- Making improvements for information to be provided for customers
  - Maximising utilisation of distributed energy resources
  - Supporting re-tasking of existing customer assets as well as connection of new flexibility resources
- Exploring issues of network access
  - Through supporting Ofgem review of network charging
  - Considering fair and efficient allocation of capacity

Connections Process – End-to-End Coverage



The Voice of the Networks

Energy Networks Association

Whole System Processes to Reduce Cost for Customers

Whole System Improvements

- Queue Management – treatment of flexibility in the queue
- Investment Planning Improvements
  - Focused on including regional input for Network Options Assessment 2018
- Forecasting – Whole System Future Energy Scenarios
- Future look at scoping whole **energy** system

Facilitating Connections Consultation

Licences and new connections processes originally written with traditional demand and generation in mind. Penetration and variety of non-traditional DERs has increased over time.

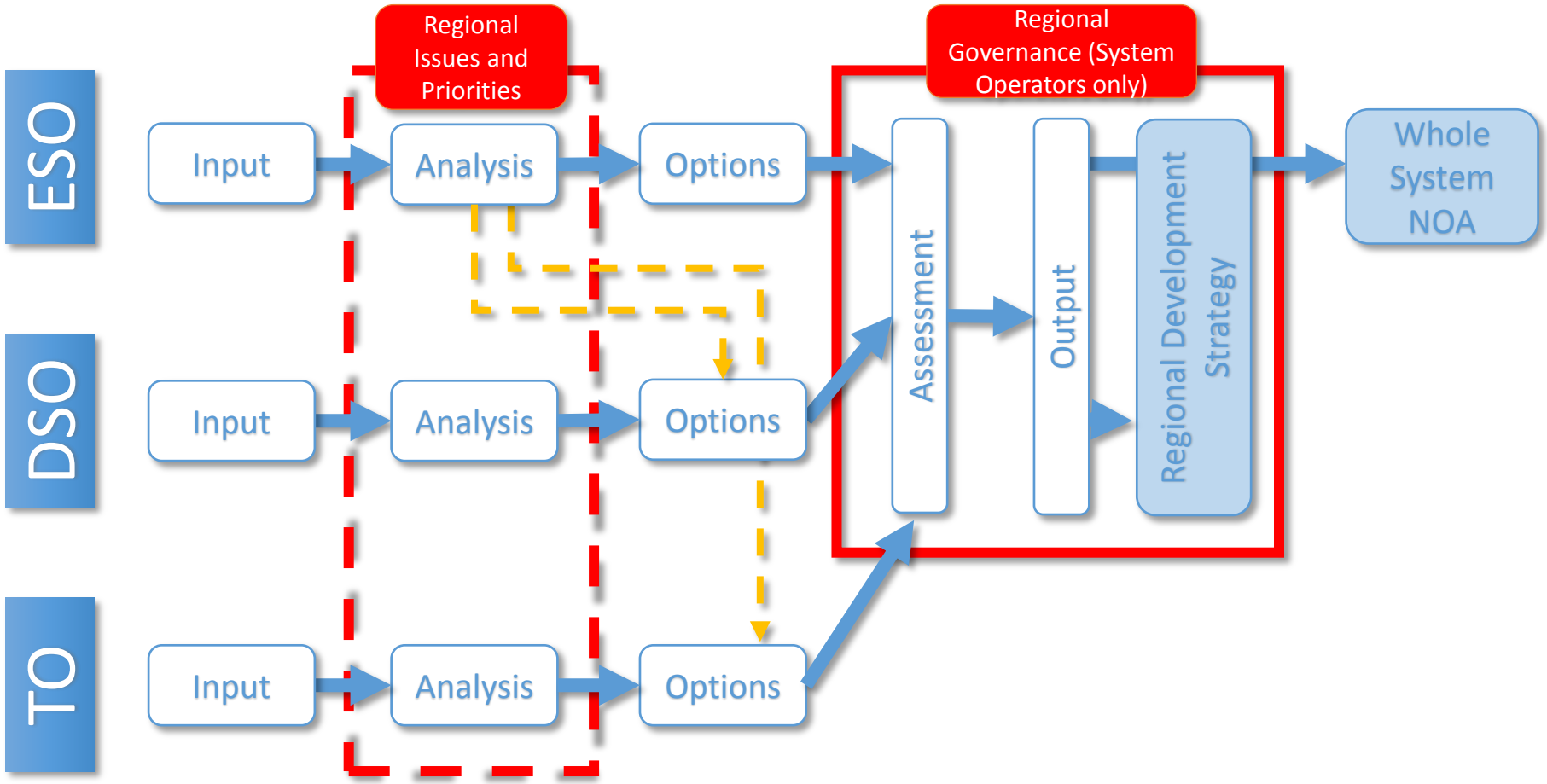
Changes have been made to processes, but Ofgem have challenged industry to make further improvements in their Smart Systems and Flexibility Plan published in July 2017: Issue and Action 1.6.

Issue: Network connection rules were not designed with storage in mind, which can lead to a number of issues including a lack of understanding of how storage connections should be treated (by both network operators and connecting customers) and the cost and time of connecting.

Action: We expect network operators and industry to continue to improve network connections for storage – in particular, acting now to clarify the connection process (including for domestic and co-located storage), increasing transparency about where to connect, and implementing better queue management. Ofgem will use the Incentive on Connections Engagement, an incentive developed under the RIIO framework, to assess if distribution network operators are addressing these issues and ensure they are engaging with connection stakeholders and responding to their needs.

Licensees have committed to addressing the fair treatment of all flexibility point collaboratively through Workstream 1 of the ENA Open Networks Project.

Whole System Investment Planning NOA Improvements



Investment Planning Update - Outcomes

2018 Outputs

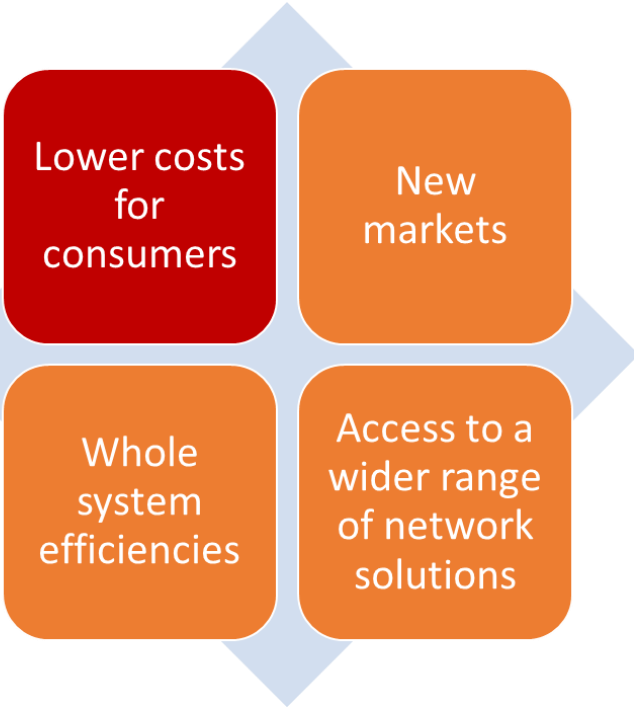
- Tools and processes required to perform and implement a Regional NOA assessment
- A view on medium and longer term models

Key Improvements

- Broadens the range of available options when looking to resolve constraints on the transmission network

Next steps

- Roll-out and evolve process across 2019 to facilitate market participation
- Embed methodology into NOA5
- Evolve thinking on Whole Energy System



Why Whole System FES?

- Whole System FES framework will facilitate the production of whole system future energy scenarios, the building blocks of which are consistent and aligned across network operators in order to support whole system industry processes
- Will support the strategic whole system planning and do not restrict the network companies from creating their own regional scenarios to support their network development planning activities
- The Whole System FES will:
  - Provide a consistent view of possible energy futures across network ownership boundaries
  - Facilitate whole system thinking within the industry
  - Allow whole system requirements to be identified
  - Facilitate whole system outcomes in the provision and implementation of solutions to address system requirements
  - Facilitate 3rd party participation in system development and operation
  - Provide a platform for coordinated stakeholder engagement

Whole System FES Options

Option		Description	Comments
1	Common GB FES	✓ All DNOs and TOs work with SO to produce scenarios and associated assumptions and levers. ✓ These are also the Distribution FES aligned across Transmission and Distribution ✓ Based on common building blocks and rules across all DNOs, TOs and SO	Impractical to implement and it also restricts regional variation. Would need input from Gas
2	**Hybrid FES**	✓ **GB FES plus additional Distribution FES** ✓ **DNOs, TOs and SO collaborate on the GB FES at GSPs** ✓ **Network companies' own best view scenarios expressed in the common framework/ building blocks of the GB FES to allow stakeholders to understand and compare scenarios**	
3	Separate FES – DNO Led	✓ DNO scenarios produced on independently based on bottom up assessment of local DER ✓ Assumptions & Results provided to NGET to incorporate into GB FES as appropriate ✓ No common building	Lacks TSO/DSO collaboration when we need to assure ourselves and our stakeholders that we are jointly planning for the big changes we expect to our networks in the future
4	Separate FES – SO Led	✓ SO produce scenarios to GSP level based on Top Down assessment of GB network. ✓ Assumptions & Results provided to DNOs to incorporate into Distribution FES as appropriate ✓ No common building blocks	

Whole Energy System Scoping

- In Open Networks to date, we have been focused on whole electricity system developments – to keep manageable scope to deliver
- In 2019, we will be widening our work to include gas, heat, electrification of transport and heat more explicitly

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Serving the Midlands, South West and Wales

DSO Transition: Flexibility Services

Graham Halladay

Network Services Manager DSO

Tuesday 23rd October 2018

WPD Flexibility Services

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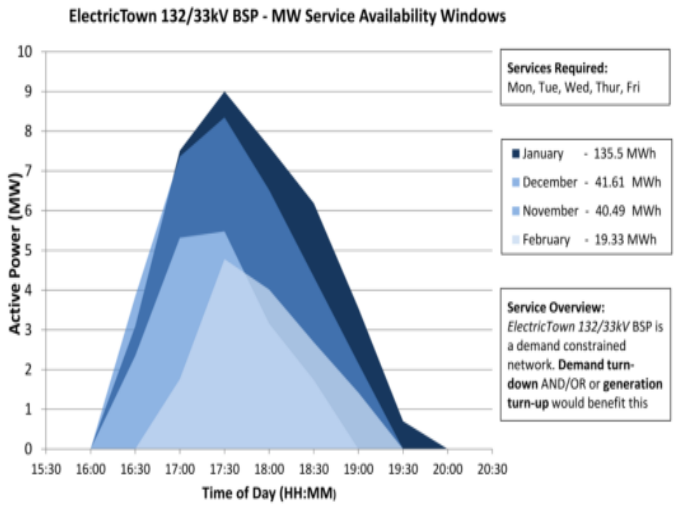
Contracting with Customers for Flexibility

- We have launched our Flexible Power brand. To date we have issued expressions of interest across 32 zones, leading to contact with over 380MW of interested flexibility
- We have an important role as a facilitator of neutral markets for Distribution System Flexibility
- We are Signposting our potential system needs for a 5 year future window using Future Energy Scenario data to inform the market. With Forecasting, we predict the needs of our network on a 1-2 year window in order to contract services and create markets



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Maximising the benefits of Flexibility

Throughout the rest of ED1 we will assess 90% of our load related reinforcement investment for a more economic delivery by flexiblity services.

90%

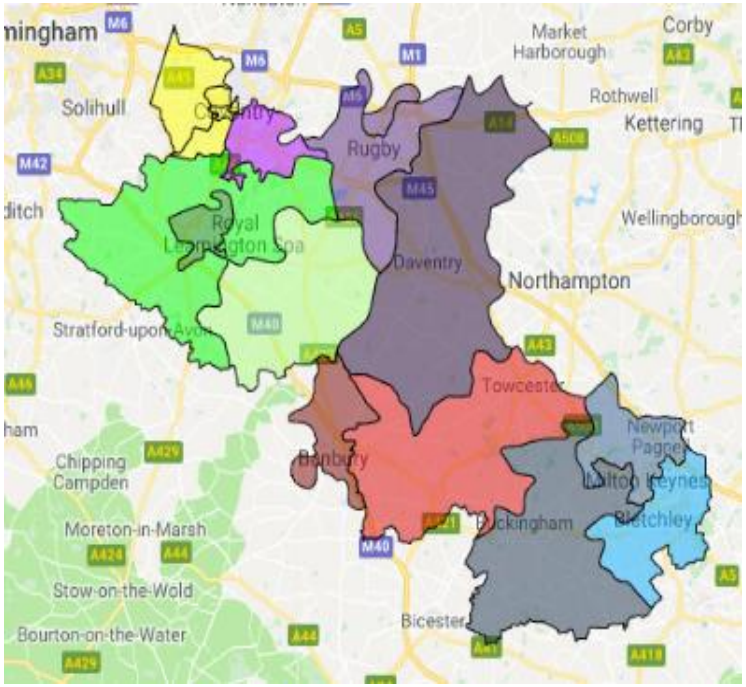
LRR investment asessed against Flexibility

For the remaining 10%, which is predominately at LV, we will continue to develop, test and evaluate other markets.

- Flexibility can provide
  - increased resilience
  - enable a reduction in socialised reinforcement costs
  - more efficient connections
- We are pushing forward with the first two as they aligned with the current charging methodology
- The third benefit requires a modified approach to charging for connections – trial being developed
- We are also developing solutions to access LV flexibility

Project Entire

- Looked to recruit customers in 14 zones in the East Midlands
- Along the M1-M40 corridor
- Offered under Flexible Power Brand
- Focussed on 132kV thermal constraints and simple use cases
  - BSPs over firm capacities (Secure service)
  - Network support under N-2 conditions (Dynamic service)
  - Network restoration (Restore service)



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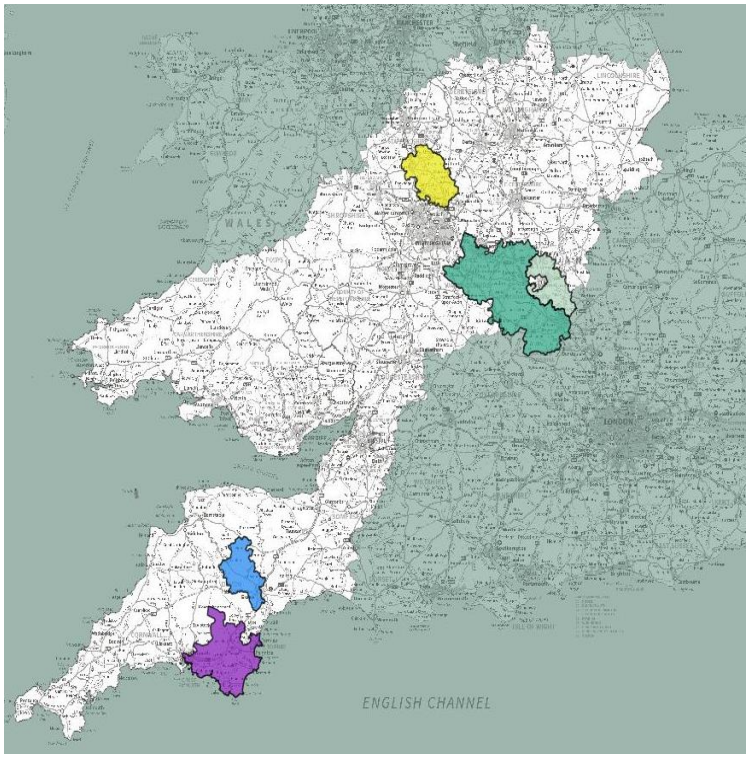
Flexibility as business as usual

- Included learning from Entire
- Ran EoI in June-July for 18 new zones (real constraints and potentially enduring)
- 16 zones taken forward to full procurement (outstanding 2 are for primary transformer constraints)



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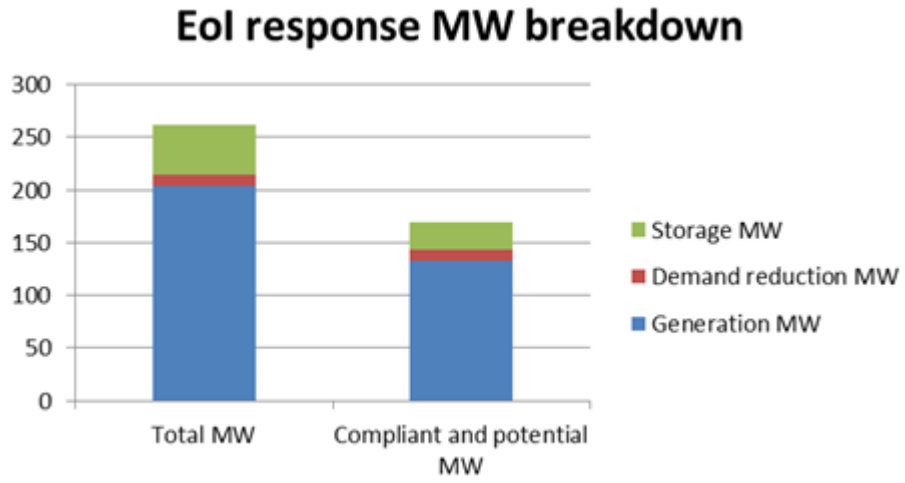
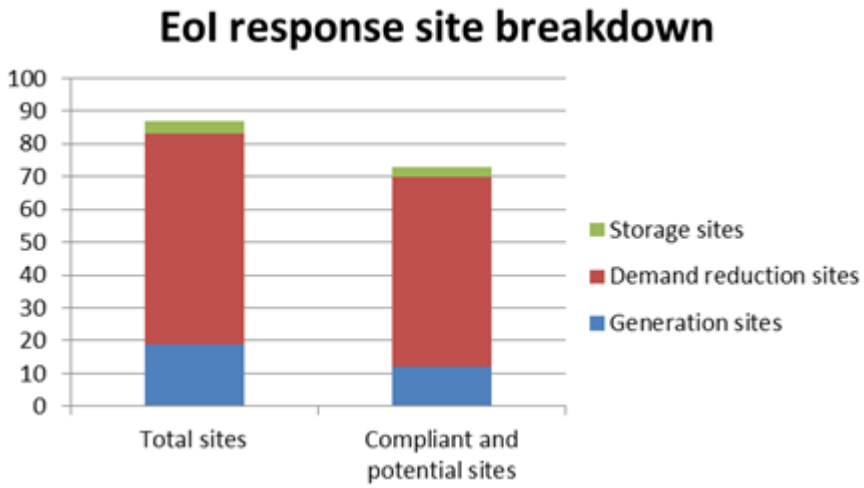
Success to date

- At 10th October we have successfully enrolled sufficient capacity to deliver solutions for 16 of the 18 zones

	MW				Sites		
Constraint	Requirement	Contracted	In Progress	Follow up	Contracted	In Progress	Follow up
Exeter City	14.5	20	20	1.6	1	1	10
Rugeley	13	6.6	8	0.5	6	4	1
Plymouth	34	1.8	60.9	29.2	1	6	46





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Three services

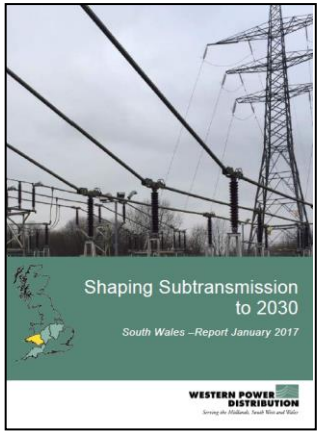
- Secure and Dynamic are main services, Restore is additional
- Based on weekly process to allow stacking of revenues
- Customers declare availability for the next operational week by midnight on Wednesday, this is accepted/rejected by 12.00 on Thursday

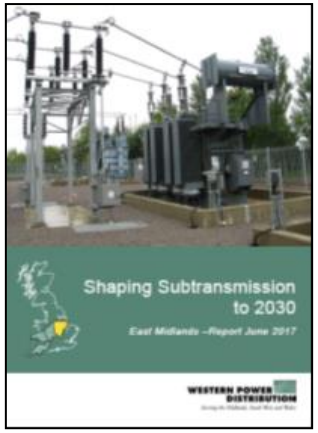
	Secure	Dynamic	Restore
Original Use case	Pre-fault mitigation	Post-fault recovery (often under planned outages)	Post-fault network restoration
Advanced payment	Yes, an arming payment for the declared run time £75-118/MW/h	Yes, an availability fee for the outage £5/MW/h	No
Utilisation payment	£150/MWh	£300/MWh	£600/MWh
Dispatch Notice	Week Ahead, on acceptance of availability	15 minutes ahead of requirement	15 Minutes ahead of requirement

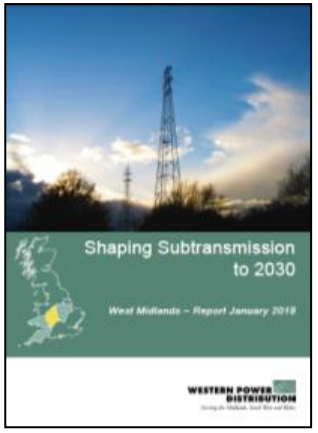
Process

Stage 1

- We publish Distribution Future Energy Scenario (DFES) information on the expected growth of demand and generation across our region out to 15 years
- We have aligned our methodology with that of the System Operator (NGET) and developed complex analysis techniques to understand the impact on our network in terms of investment and opportunities for flexibility







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Process cont.

Stage 2

- We have developed a list of constraints based on WPD best view on the expected growth of demand and generation across our region out to 2028

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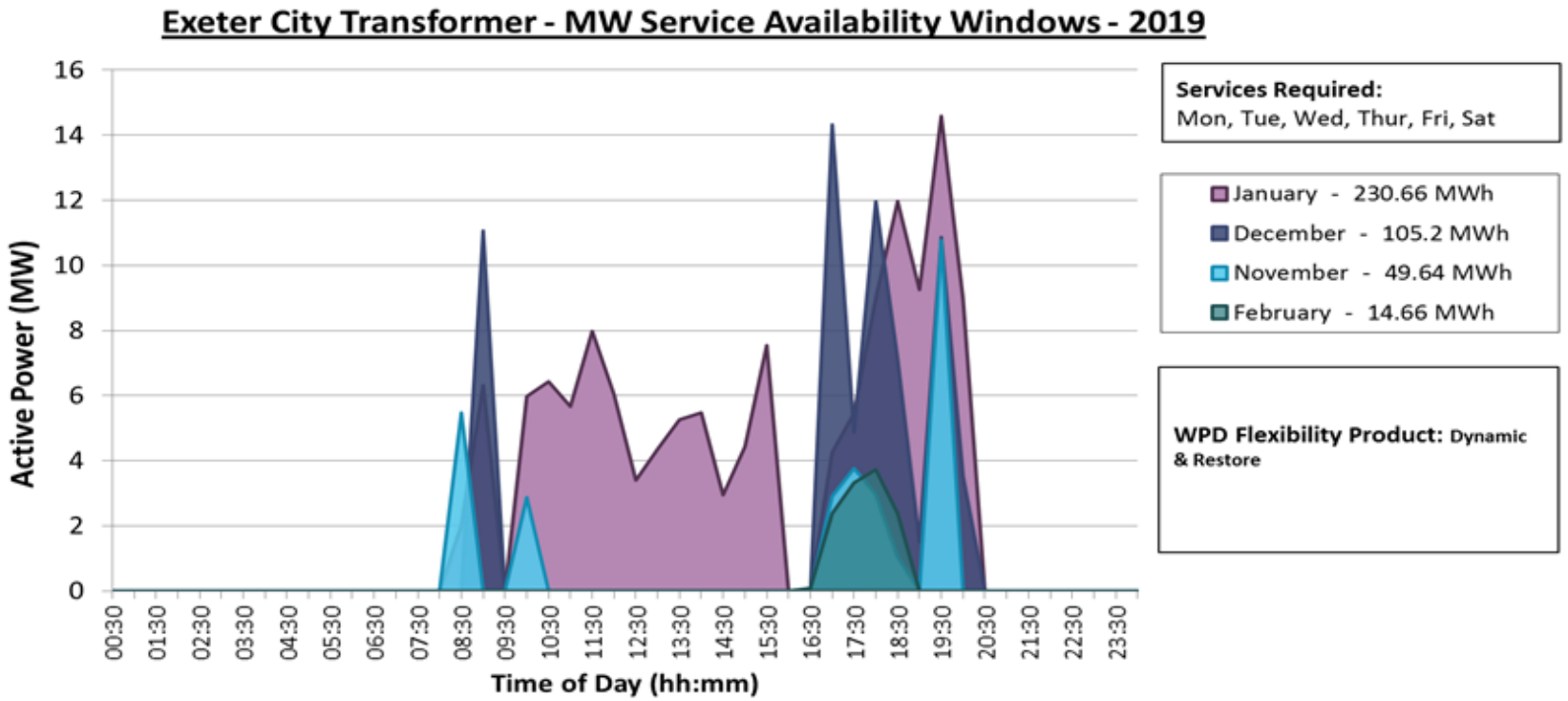
Process cont.

Stage 3

- We will publish Sign Posting of our future distribution system needs based on the likely impact on our network of the expected growth of demand and generation across our region out 5 years



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Process cont.

Stage 4

We will evaluate system constraints against decision making model to determine lowest cost, lowest regret solution

- Decision making model
  - Document our process
  - Test this against real constraints and carry out internal review
  - Issue documents externally for comment
  - Amend documents based on feedback

Process cont.

Stage 5

Proceed with Flexibility procurement

Stage 6

Publish annual report of all constraints and actions taken

Assurance Checks

- Forecast future system needs (Constraint plan)
  - Verification that the forecast information relating to constraints agrees to WPD forecast model (internal audit)
- Publish sign posting of future system needs
  - Verification of accuracy and completeness of published constraints to verify all have been correctly disclosed and details agree to underlying systems (internal audit)
- Evaluate system constraints to determine lowest cost, lowest regret solution
  - Verification that WPD costed solutions adhered to WPD's costing methodology and were free from material error (internal audit)
  - Checks that the WPD decision making model used in the evaluation of potential solutions was up to date, that the solution input rates and values were accurate and that the lowest economic cost solution output was selected (internal audit)
- Publish annual report of constraints and actions taken
  - Verification that WPD followed documented process (external audit)

Feedback

Is there anything else we need to do

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Lunch

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Connections update

Tim Hughes
Connections Policy Manager
Tuesday 23rd October 2018

Connections Update

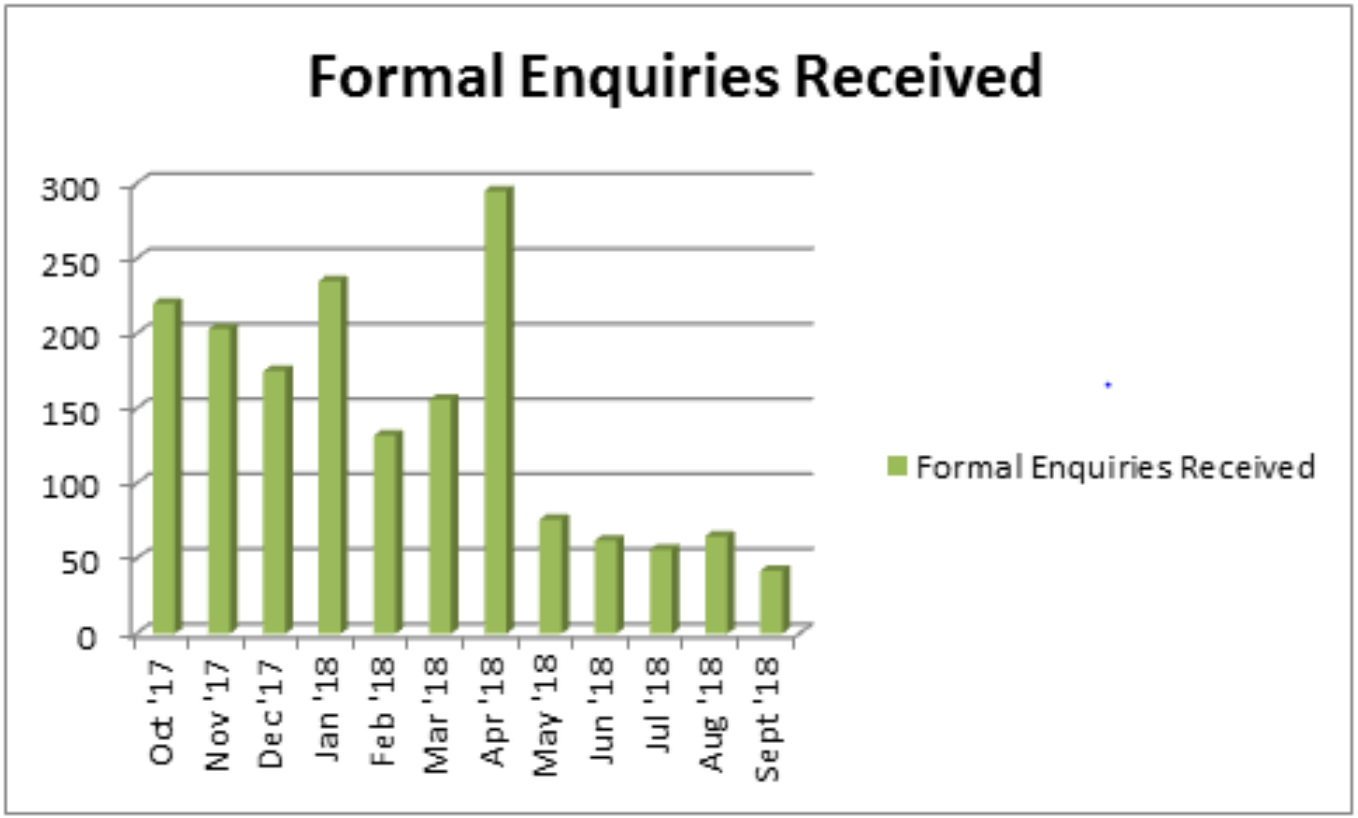
Agenda

- A&D Fees
- Capacity Allocation & Reservation
- G98/G99 - Requirements for Generators
- Connection Offers
- Allowable Changes
- DUoS Charging Guidance

Connections Update

A&D Fees update

- What has happened since the Regulations were introduced?



- What about Budget Estimates?

Connections Update

A&D Fees update

- How is it been received?
- Concerns levied at a national level typically around non-uniformity of application
- There is a call to:
  - Provide additional and improved channels for dialogue with customers
  - Communicate more effectively throughout the connection application process
  - Publish detailed and up-to-date information on all costs incurred in preparing connection offers, on at least an annual basis, to improve transparency and accountability
- DNOs working together through the ENA

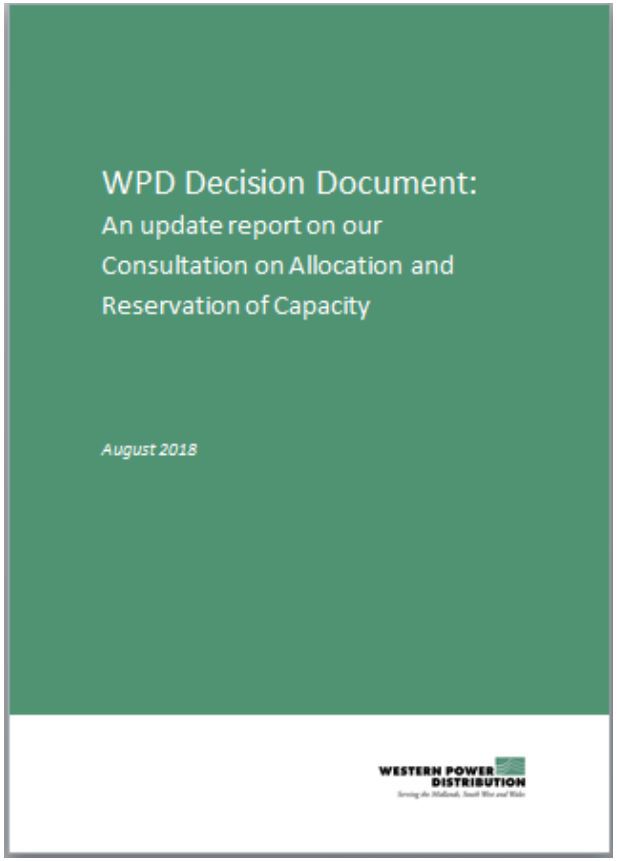
Connections Update

Capacity Allocation and Reservation

- We consulted on the issues we are encountering, setting out some proposals on our minded to approach in how we allocate network capacity and allow customers to reserve it at three key stages of the connection process;
  - Application
  - Acceptance of offer
  - Energisation and subsequent build out

- Decision Document was issued in August

- The update report sets out the conclusions we have drawn having considered customer responses



Connections Update

Capacity Allocation and Reservation

- Next step is to develop policy and process in a number of key areas including:
  - Connection offer milestones
  - Capacity Reservation rules
  - Treatment of speculative developments
  - Developing infrastructure offers
- Timescales:
  - Develop throughout the Autumn
  - Implement by the end of March 2019

Connections Update

G98/G99 Requirements for Generators

- Two new Engineering Recommendations (ERECs) have been developed to take account of the latest requirements under RfG:
  - *EREC G98 – Requirements for the connection of Fully Type tested Micro-generators (up to and including 16A per phase) in parallel with public Low Voltage Distribution Networks on or after 27 April 2019*
  - *EREC G99 – Requirements for the connection of generation equipment in parallel with public distribution networks on or after 27 April 2019*
- These documents have been issued to reflect the latest requirements for generators connecting to the GB distribution system as a consequence of the introduction of new European Connection Codes.
- Aim is to increase active control of the network and to keep the electricity supply stable

Connections Update

G98/G99 Requirements for Generators

- Developers wishing to connect generation in parallel with our network on or after 27th April 2019 will need to comply with the relevant ERECs unless they have a contract for the purchase of main generating plant that has been signed before 17 May 2018

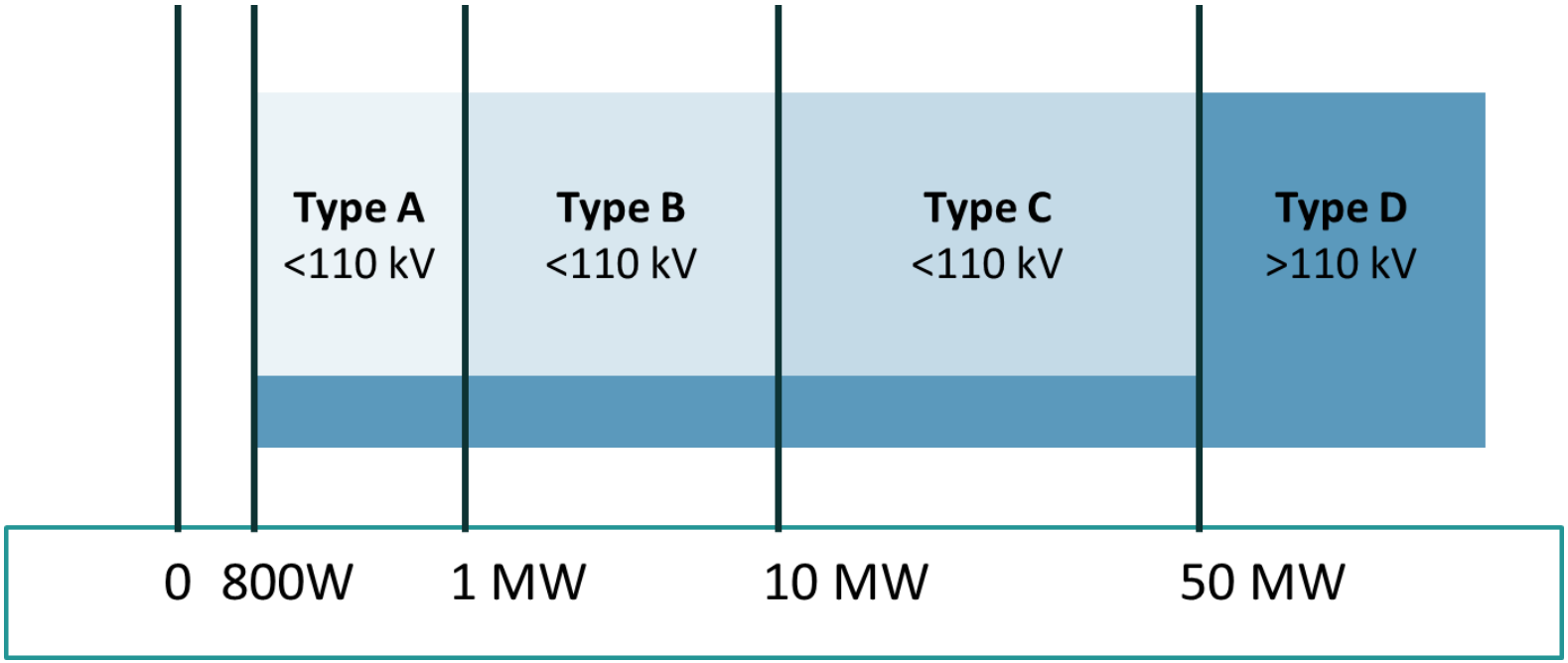
- Developers must notify the DNO by 17 November 2018

- Generation connecting before 27th April 2019 can connect under either EREC depending on which document the generating units were designed to comply with

Connections Update

G98/G99 Requirements for Generators

- Generators will be categorised according to size

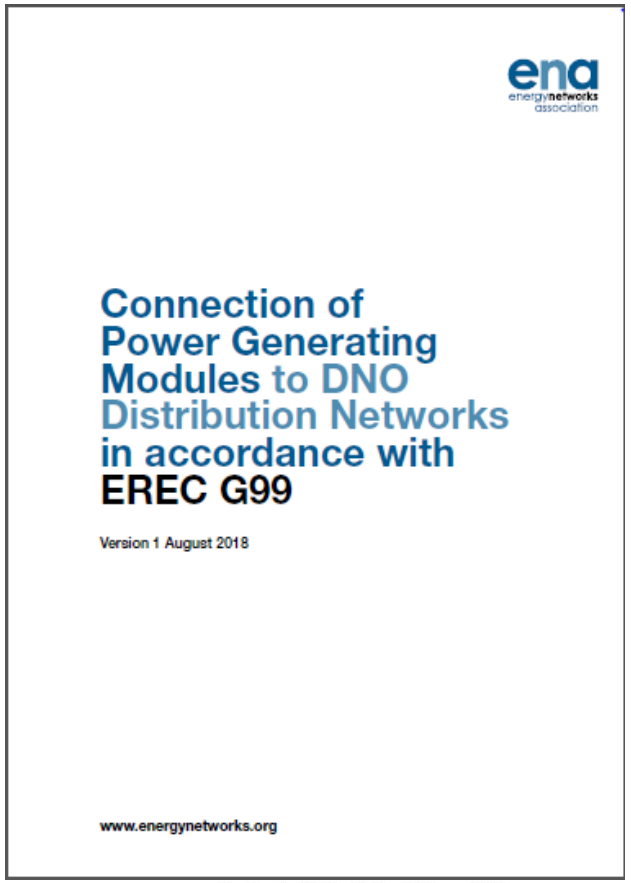


- For Distribution connected (Types A, B and C), new compliance and simulation requirements, particularly with respect to basic capabilities and fault ride through

Connections Update

G98/G99 Requirements for Generators

- New procedures will be covered by various updated documentation:
  - Distribution Code (DPC7 substantially amended)
  - EREC G98/EREC G99
  - Revised Standard Application Form
  - Revised DG Guides
- Additional burden on developers:
  - Demonstration of compliance via product type tests, manufacturers' information and onsite test results;
- And DNOs:
  - Issuing Operational Notifications: EON, ION, FON, LON



Connections Update

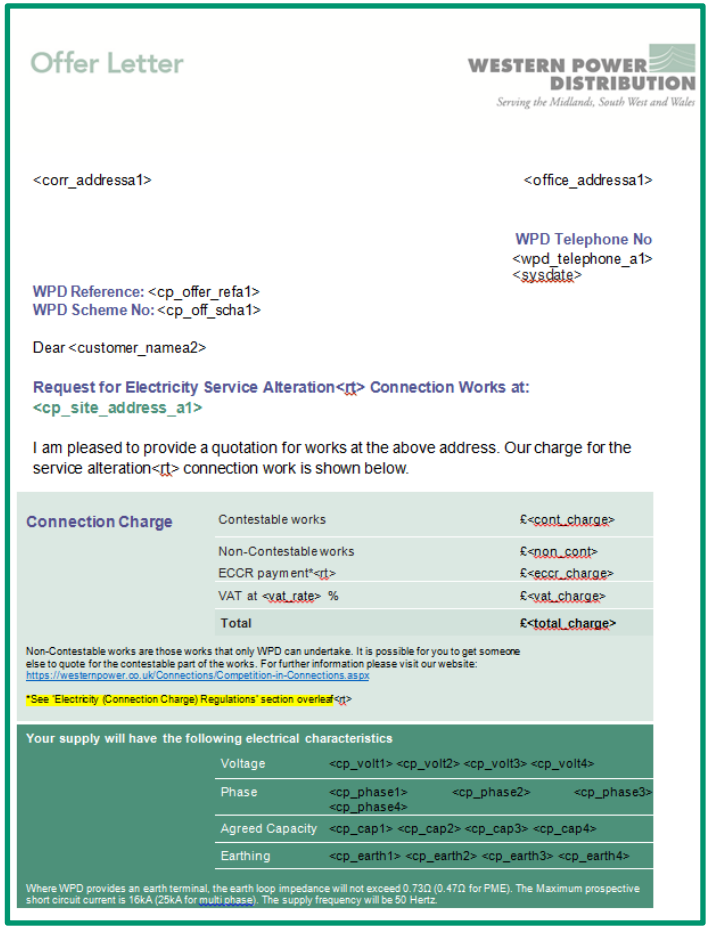
G98/G99 Requirements for Generators

- What are we doing to inform customers?
  - Written to customers with accepted connection offers
  - Included reference in all new connection offers
  - Provided information on the website
  - Holding Webinar on 16th November
  - Registration available now: https://attendee.gotowebinar.com/register/4632173612350990859
- DER Technical Forum has been re-established

Connections Update

Connection Offers

- Long Form Offer now issued
- What's different?
  - ➢ Charges and works required more immediately apparent
  - ➢ 'Small print' now sign-posted rather than included in Offer
- Feedback generally positive
- Intent to extend to Budget Estimates



Offer Letter

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<corr_addressa1>

<office_addressa1>

WPD Telephone No
<wpd_telephone_a1>
<sysdate>

WPD Reference: <cp_offer_refa1>
WPD Scheme No: <cp_off_scha1>

Dear <customer_namea2>

Request for Electricity Service Alteration<rt> Connection Works at:
<cp_site_address_a1>

I am pleased to provide a quotation for works at the above address. Our charge for the service alteration<rt> connection work is shown below.

Connection Charge		
	Contestable works	£<cont_charge>
	Non-Contestable works	£<non_cont>
	ECCR payment*<rt>	£<eccr_charge>
	VAT at <vat_rate> %	£<vat_charge>
	Total	**£<total_charge>**

Non-Contestable works are those works that only WPD can undertake. It is possible for you to get someone else to quote for the contestable part of the works. For further information please visit our website: https://westernpower.co.uk/Connections/Competition-in-Connections.aspx

*See 'Electricity (Connection Charge) Regulations' section overleaf<rt>

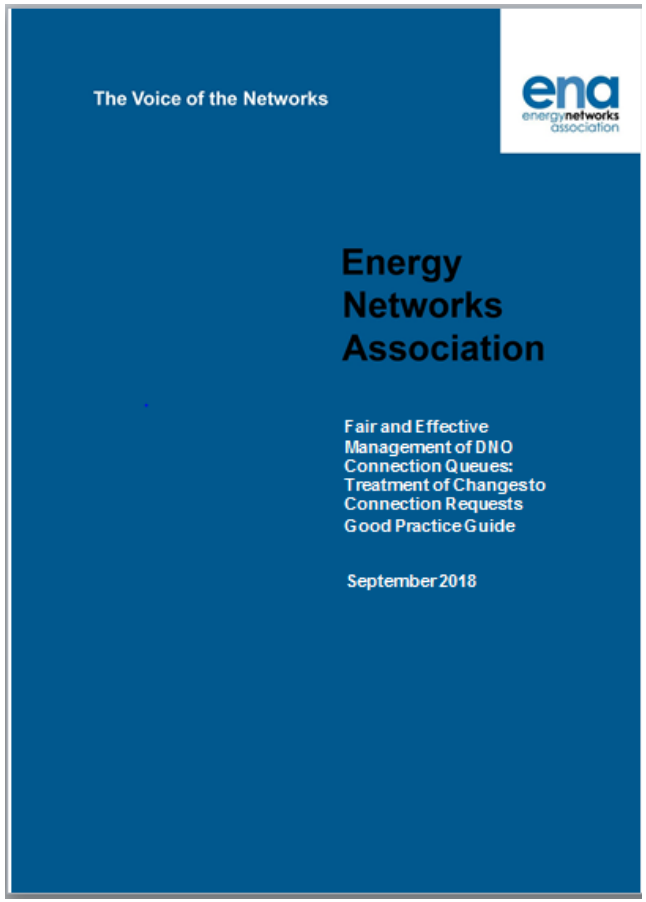
Your supply will have the following electrical characteristics	
Voltage	<cp_volt1> <cp_volt2> <cp_volt3> <cp_volt4>
Phase	<cp_phase1> <cp_phase2> <cp_phase3> <cp_phase4>
Agreed Capacity	<cp_cap1> <cp_cap2> <cp_cap3> <cp_cap4>
Earthing	<cp_earth1> <cp_earth2> <cp_earth3> <cp_earth4>

Where WPD provides an earth terminal, the earth loop impedance will not exceed 0.73Ω (0.47Ω for PME). The Maximum prospective short circuit current is 16kA (25kA for multi phase). The supply frequency will be 50 Hertz.

Connections Update

Allowable Changes

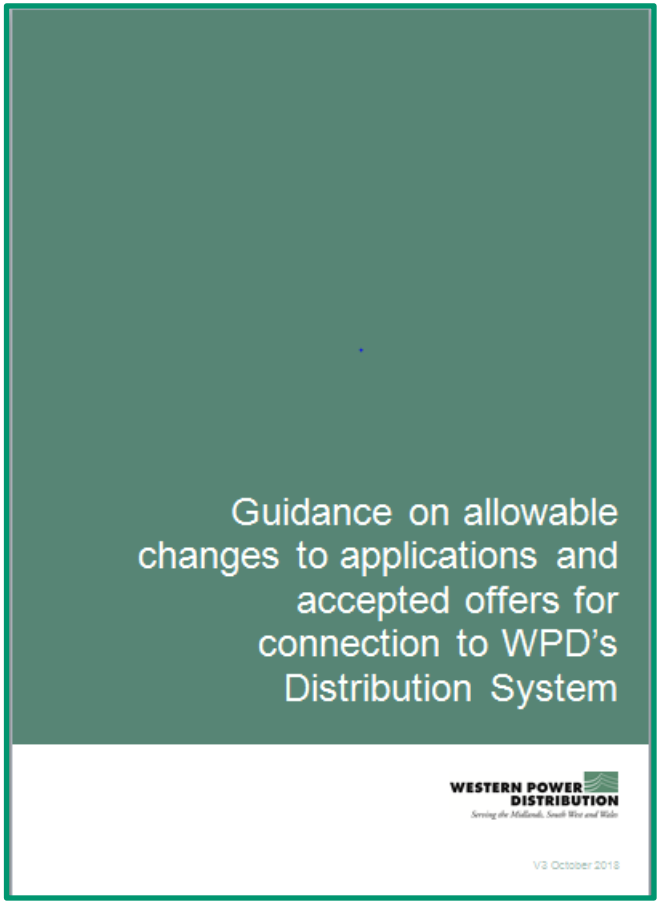
- New guidance document outlining good practice for DNOs when assessing whether or not a change can be made to a connection application
- Specifically covers changes - after a connection request has been made and before energisation
- Provides clarity for the customer and manages expectations
- Includes high level over-riding principles and several change request scenarios



Connections Update

Allowable Changes

- WPD has its own guidance document
- Largely reflects the ENA Good Practice document
- Revised format to provide clarity
- Added scenarios
- We will re-issue our document in parallel with the ENA document



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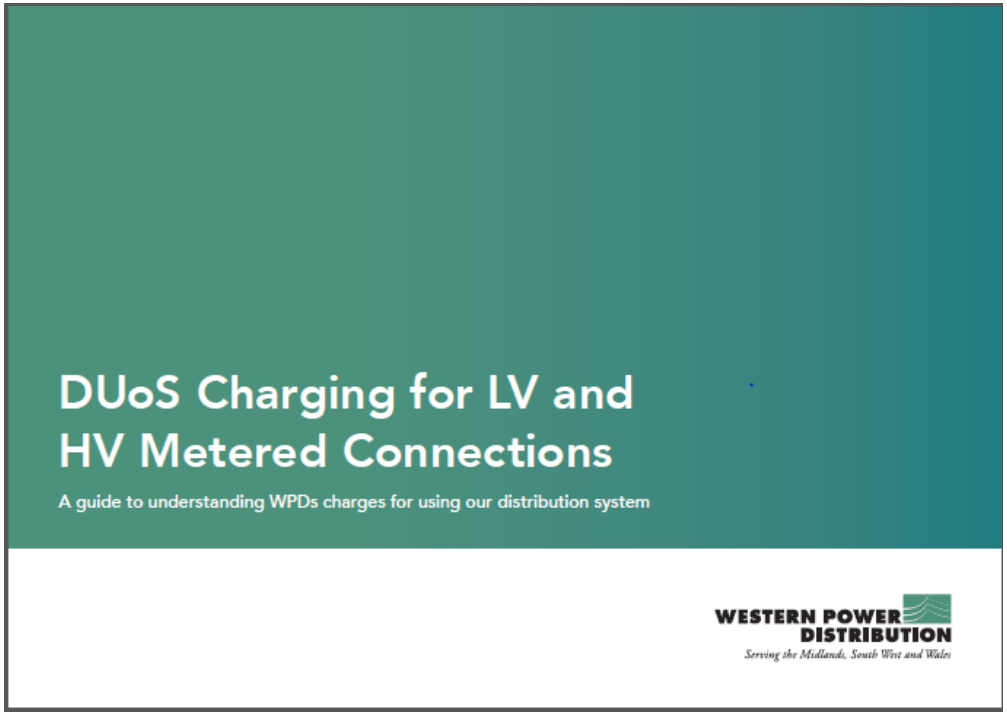
Connections Update

DUoS Charging Guidance

- New guidance document to aid customers connecting at LV or HV
- Feedback suggests customers are not fully conversant with attribution of DUoS
- Objective is to help customers to understand how tariffs work and potentially reduce charges



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Stakeholder views?

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Summary

Richard Allcock
Connections Policy Engineer
Tuesday 23rd October 2018