



Distributed Generation Owner/Operator Forum

14.00-16.00
23 April 2020

- 14.00 **Introduction, action review and objective setting from the chair and WPD**
- 14.15 **Improving industry and WPD communications to address outages/constraints**
- Update on the impact of COVID-19 on outages and communication
 - Forum member feedback on communication
 - Report back from single point of contact
 - Latest information regarding the outage portal
- 14.45 **Distributed Generation Community KPI's**
- 15.00 **Accelerated Mains Loss of Mains Change Programme and the impact of COVID-19 on connections**
Peter Aston, primary system design manager, Western Power Distribution
- 15.25 **Update on Flexible Power tenders and future flexibility services**
Ben Godfrey, network strategy manager, Western Power Distribution
- 15.50 **AOB**
- 16.00 **Close**

DG community Key Performance Indicators (KPIs) from WPD:

- Lost generation (MWh) and lost revenue for wind and solar PV (£) using existing model – quarterly reports per license area.
- Outage Notifications – How far in advance are these being sent by the person responsible for undertaking the work?
- How many enquiries are being sent to WPDs dedicated generator inbox from DG customers on a monthly basis? We could split this into sub-categories such as incorrect contact details / updating contact details, outage queries.
- Number of updates to customer contact information per site per year.
- Number of proactive calls made to update customer contact information per year.
- Number of users on the WPD generator portal (quarterly)
- Number of logins to the generator portal (quarterly)
- Number of outage notifications sent out via the generator portal
- Updates to contact details by users of the generator portal
- Abandoned / Postponed Outages – How many of WPDs planned outages are being cancelled / postponed after they have appeared on the Generation Portal / 4 Week Report? Including reason for outage.
- Short Notice Outages – How many outages are being planned / how many notifications are being sent to DG customers with less than 4 weeks' notice?
- Number of DG sites making changes to assets to reduce impact of outages (e.g. additional switch installed).
- How many new DG connections are being made by WPD every quarter? This could be split into wind / solar etc.
- What is the average length of time it is taking to connect new DG sites to WPDs network? What voltage levels are these connections being made at and where on the network?
- How many and what capacity (MW) of Accelerated Loss of Mains Protection alterations have been completed per round of funding? Include split between retrospective and new changes made to LoM settings.
- Estimate of remaining budget for further LoM changes for WPD.

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WPD new connections works during COVID-19 restrictions

Current position as follows:

- WPD continues to follow the most up to date Government advice
- We are currently only undertaking essential works, such as:
 - Fault restoration and repair
 - Safety related works
 - Critical connections works, e.g. care homes, hospitals, food shops, telecoms, etc
- If you have questions on specific issues, please contact the Planner or Project Engineer
- Where possible we will progress design works for connections
- We are open as normal to receive applications for connection
- Planners are available to answer questions
- Connection surgeries are still possible



Accelerated Loss of Mains Change Programme

Peter Aston, Primary System Design Manager, WPD
23rd April 2020



[westernpower.co.uk](https://www.westernpower.co.uk)

Accelerated Loss of Mains Change Programme

Contents

- Quick reminder of the programme
- WPD progress to date
- Update on COVID-19 impacts on the programme



Accelerated Loss of Mains Change Programme

Loss of mains protection

- Vector shift – has experienced mal-operation following 400kV faults
- ROCOF – historical setting of between 0.125Hz/s and 1Hz/s has led to frequent trips
- G59/3-3 published on 1 Feb 2018 to include new LOM settings:
 - Removed Vector Shift as Loss of Mains protection
 - Increased ROCOF settings to 1Hz/s, 500ms time delay
 - **Retrospective for existing sites. Implementation by 31 Aug 2022.**



Accelerated Loss of Mains Change Programme

Accelerated Loss of Mains Change Programme

- NGENSO has identified a system need to accelerate this change before 31 Aug 2022:
 - System stability, emphasised by 9th Aug 2019 low frequency event
 - Cost of operating the system and holding reserve for LOM trips (predicted to cost £600m between 2018 and 2024)
 - Important now with reduced system demands (15-20% lower during lockdown)
- From Oct 2019 – Oct 2021 (approx.)
- Payment is £1500 / £500 per settings change / disabling or £4000 for a relay change



Accelerated Loss of Mains Change Programme

Process

- Applications through the ENA Portal – went live 2nd Oct 2019
- DNO verifies application and approves for a window
- NGESO assesses and accepts applications against budget
- Generator undertakes works and provides evidence to DNO
- DNO pays generators for works completed
- DNO invoices NGESO for payments to generators plus admin costs
- Further information available at:
 - <http://www.energynetworks.org/electricity/engineering/accelerated-loss-of-mains-change-programme.html>
 - Dedicated WPD email: ALOMCP@westernpower.co.uk



Accelerated Loss of Mains Change Programme

Criteria

For participation, sites must meet the following criteria:

- Operate in long term parallel with the distribution network
- Connected prior to 1st Feb 2018
- Currently has the following LOM protection:
 - Vector Shift
 - ROCOF with settings more sensitive than 1Hz/s (i.e. not compliant with G59/3-3)
 - ROCOF where the settings have already been modified to meet G59/3-3
- Have not previously received payment
- Have not needed to previously have changed settings (e.g. ≥ 5 MW sites with ROCOF)



Accelerated Loss of Mains Change Programme

Progress

- ~1250 applications received
- ~280 sites completed works (evidence received)
- ~25 sites paid
- 3 sites have had a virtual sample site visit
- Completion dates currently spanning all of 2020 and into Q1 2021
- **Plenty of funding left – please apply!**



Accelerated Loss of Mains Change Programme

Witnessing and sample site visits

- Relay changes and disabling of settings are required to be witnessed, unless works are undertaken by a recognised contractor.
- Recognised contractors list published - <https://www.westernpower.co.uk/downloads-view/81532>
- A % of sites where changes were not witnessed will be subject to a sample site visit (maybe up to 600 sites for WPD).
- Sample site visits (for selected sites) are required for payment to be released.



Accelerated Loss of Mains Change Programme

COVID-19 restrictions

- Due to system risk, this programme has been deemed High Priority
- This means that where possible it will continue to operate
- Completion dates up to end of Sept 20 will be extended 3 months
- DNO witnessing and sample site visits still required, but are likely to be completed via video conferencing with the contractor on site
- Payments will be processed as normal
- Window 3 closes 12th May
- Please ensure new applications have a suitably long lead time
- Window 4 likely to start 13th May – further comms by end of April



Accelerated Loss of Mains Change Programme

Questions?



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Flexible Power Update

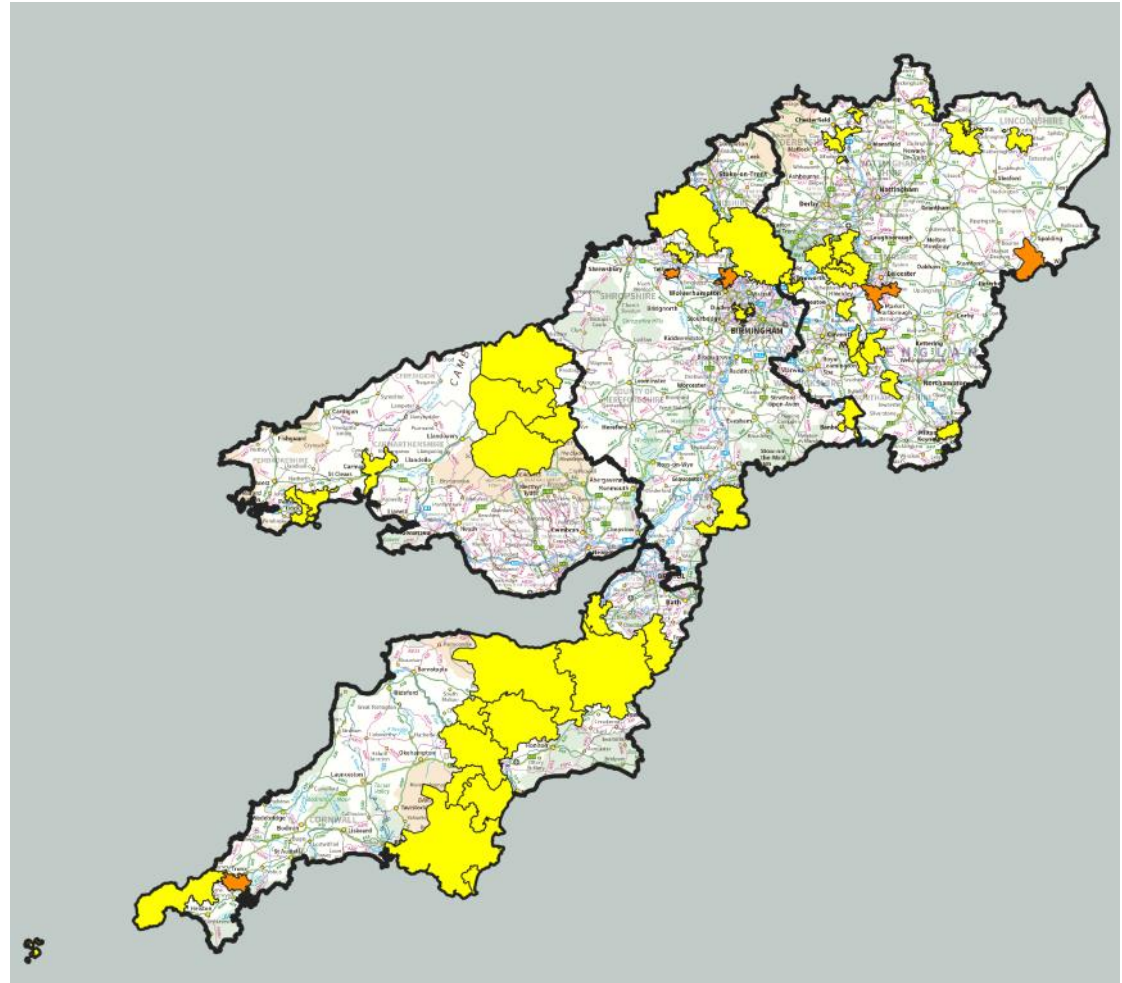
April 2020



Ben Godfrey
Network Strategy Manager

Flexible Power Coverage – 2020 Cycle 1

- 42 constraints across 174 primary substations
- 334MW required
- ITTs out in March
- To operate over summer and winter 2020
- Affects over £125m of reinforcement
- **Additional zones** signposted with future requirements over 5 years

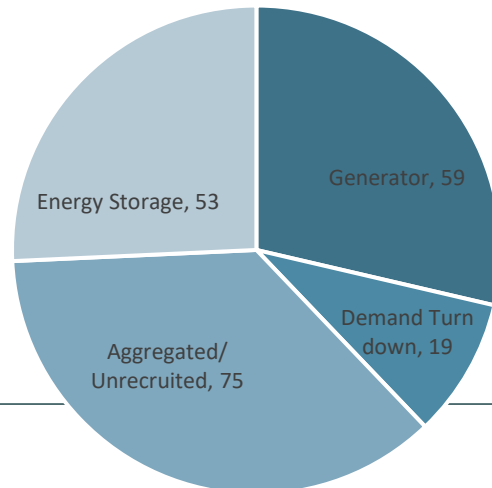


Flexible Power Procurement Results

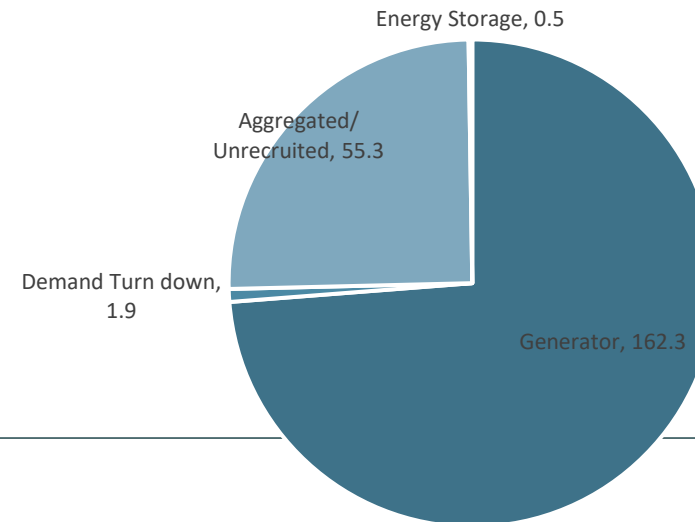
Procurement Cycle	Primaries Covered	MW Sought	Flexibility Contracted (MW Total)
2018	18	63	35.3
2019 H1	80	93	56.8
2019 H2	120	184	123.1
2020 H1	175	334	217.7

We also signed a further 14.8MW of energy storage to operate under DSM in 2019/20

Flexible Power - Number of Assets



Contracted MW Capacity



Flexible Power – 2019 Summary



Flexible Power Year in Numbers 2019

Summary

To enable a greater volume of demand, generation and storage to be connected, Western Power Distribution (WPD) networks are becoming smarter and more active. Creating a more efficient and flexible electricity system will benefit all customers and empower them to be at the centre of the energy revolution.



This report details how WPD has been actively using flexibility, contracted through third parties, to deliver solutions for our network throughout 2019.



To get involved with providing flexibility to WPD, please visit www.flexiblepower.co.uk

Coverage

2019 saw a significant increase in the areas where we were seeking to use flexibility on our network. During the 2nd procurement round of 2019 we offered flex providers the option of securing a longer term contract of up to 4 years rather than the 1 year contract. The result of this was that 50% of providers took up the longer term offer.



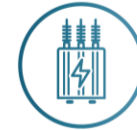
29

Significant reinforcement schemes assessed



3

Potential reinforcements deferred



122

Primary substations where flexibility sought

803,166

Customers served within flexibility locations



Product offerings to market:



Secure

Pre-Fault



Dynamic

Post-Fault



Restore

Outage Restoration

Flexible Power – 2019 Summary

System needs

Flexibility can help support our system, enabling us to deliver a safe, secure and economic service. As our usage of flexibility as a whole increases so too will the power and energy we require.

184MW

Peak power required

1,660MWh

Annual energy required

34,779MWh

Annual availability required

Zones



7

Secure zones



10

Dynamic zones

Funding



100%

Funded through
BAU activity



0%

Funded through
innovation trials

Market response

297MW

Volume of interest from market

123MW

MW Contracted



125

Flex Providers
entering procurement



17

Contracts
signed

Flexible Power – 2019 Summary

Conventional reinforcement

72

Number of significant conventional reinforcement schemes completed



£44.8m

Total spend on conventional reinforcement



£26.4m

Value of deferred/avoided reinforcement in areas of successful flexibility



£547,000

Flex Spend in 2019



Operational performance



Secure

638_{MWh} / 126_{MWh}

Availability offered / accepted



Dynamic

32016_{MWh} / 6578_{MWh}

Availability offered / accepted



Restore

74252_{MWh} / 74252_{MWh}

Availability offered / accepted



590 MWh

Total dispatched by WPD



543 MWh

Total delivered by Flex Providers



92 %

Average Flex Provider delivery



Earning potential

Secure areas



£300 per MWh

Dynamic areas



£300 per MWh

Restore areas



£600 per MWh

Flexible Power – 2019 Summary

Flex Provider feedback



Flex Provider satisfaction



of existing Flex Providers would recommend Flexible Power to other organisations.



agree it is useful for their company.



agree it is useful for the wider energy system.

Flex Provider experience



Simple tendering process



Straightforward contracts and payment terms



Responsiveness of the Flexible Power team



Extra revenue stream that is stackable and compliments day to day business

Action on feedback

We held 8 stakeholder events over 2019 and published a public consultation to gather feedback from existing Flex Providers and wider market stakeholders. As a result we introduced changes to the Flexible Power offering which seek to lower barriers and maximise participation from wider market demographics.



Minimum run times reduced to one hour.



Minimum asset size removed.



Liabilities capped and mutual.



Flexible Power portal investment for increased asset operability.

Flexible Power – Future Developments

- Platform improvements
- Greater level of standardisation across DNOs
 - Standard products
 - Standard contract terms
 - Standard dispatch methodologies
- Marketplace integration tools
 - APIs for data
 - MPAN checking and qualification
- Generation turn down/demand turn up Markets
- Reactive Power markets

Thank you for joining us