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domestic  
performance  
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energy storage  
system operator  
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DNO  
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stakeholders  
customers  
efficient  
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DSO  
flexible  
smart  
transmission



As we begin to transition from a Distribution Network Operator to a Distribution System Operator, Western Power Distribution recognises that our customers and stakeholders need to be at the heart of our transition programme.

By understanding and meeting the needs of our customers and stakeholders, we can ensure that the enhanced capabilities we are developing are most representative of the expectations of current users of the UK energy system.

We are also seeking to engage with new future participants, some of which we may have had limited interaction with in the past. As more opportunities for participation within the energy system are created, these new entrants may play an increasingly significant role and so it is essential that we understand how to best facilitate these interactions.

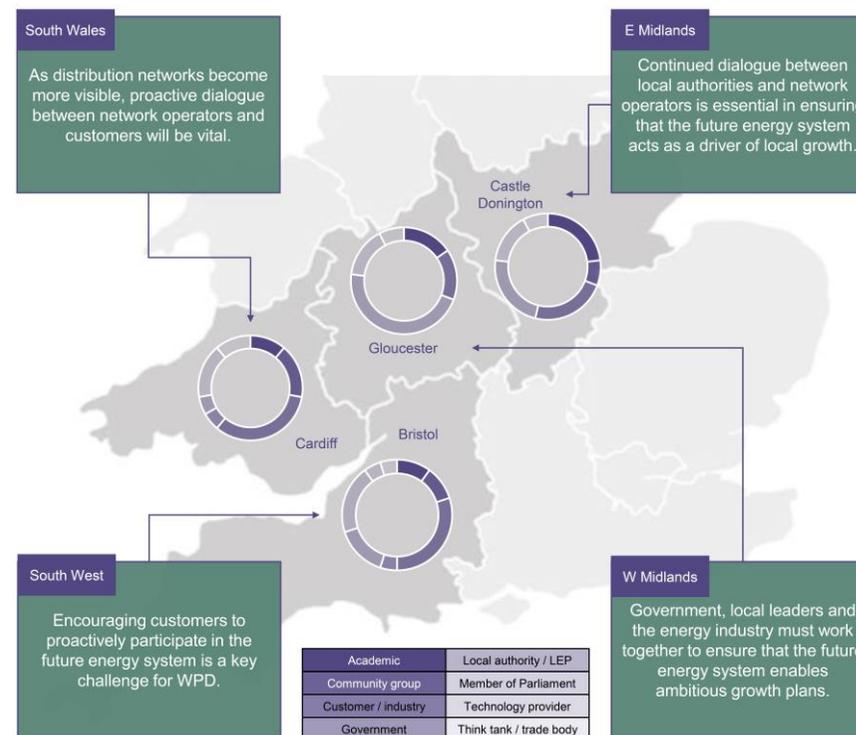
In June 2017 we published our first DSO Strategy and Transition Plan, inviting interested parties to read through our proposals and provide feedback to us. The feedback window ran through to the end of September to give time for responses over the summer.

On 14<sup>th</sup> September, we hosted a DSO Strategy launch event at The IET in Birmingham, with in excess of 120 people in attendance to hear us present our DSO Strategy and to pose questions to our panel session of industry experts.

Across the month of September we also hosted a series of DSO Round Table sessions, allowing over 50 stakeholders to shape our future as we

transition to being a DSO. These were carried out across all four licence areas and engaged a broad cross section of customer representatives and allowed us to further refine some of the initial messaging we had received during our consultation.

The key themes discussed and make up of audience are illustrated below.



Western Power Distribution believes it is important to be transparent in our thinking and provide the detail needed to lead the industry and invoke discussions on our most immediate next steps. To this extent our DSO Strategy and Transition Plan focused on a simple high level message of 4 key points:



This was expanded out into a full DSO Transition programme, which identified 22 work plan activities across 5 key enabling themes. This represented around £125m of investment by the end of ED1 into furthering our competence as a DSO.

We also highlighted some key principles which set out our guiding philosophies and would steer our development of DSO functionality.



We would like to thank everybody who responded to our consultation or participated in any of our DSO Strategy and Transition Plan events. Your engagement is important to us and your feedback will help develop the future of the network.

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The following report summarises the comments received across all DSO Strategy and Transition Plan engagement activities.

There was significant support from the responses received in agreeing that the move to DSO operations will be required to meet the future needs of WPD's customers. All of contributors either agreed or strongly agreed that this would be an essential role to be undertaken.

**ACTION: WPD will ensure we are leading the roll out of DSO operations across all of our regions.**

Many stakeholders applauded WPD's tactical approach to implementing DSO and felt that the focus on short to mid-term actions, combined with an appropriate level of detail, presented an achievable and realistic pathway to becoming a DSO. Some stakeholders challenged WPD to be bolder in its vision and provide a longer term narrative to that transition.

**ACTION: WPD will provide further clarity about how the DSO transition may evolve over a longer timeline.**

During our engagement process, it was clear that many of our customers wanted to be active participants in facilitating our transition to being a DSO. Generators, consumers, technology providers and integrators were all keen to further understand what the move to more active network operations would mean for them on an individual basis.

**ACTION: WPD will begin to describe the expected roles of future energy system participants.**

In our consultation we asked for comments on and help with the prioritisation of our DSO guiding principles.

There was broad consensus between our stakeholders that the DSO should primarily focus on enabling efficient whole system outcomes and there was a strong preference for the DSO to co-ordinate with the TSO to achieve this.

The following table aggregates the ranking of the principles in order of highest priority as scored in our consultation responses:

Rank	DSO Principle
1	Efficient whole system outcomes
2	Value for all customers through flexibility
3	Facilitation of neutral markets
4	Flexibility delivering QMEC
5	GBSO co ordination
6	Using technology to improve resilience
7	Value for individuals through flexibility
8	Level playing field
9	Maximisation of accessibility for vulnerable customers
10	Environmental benefits
11	Provision of services where no actor exists

Our stakeholders valued delivering value for all customers through utilisation of flexibility and facilitation of this by creating neutral markets. Additionally, our stakeholders expect us to use this flexibility to provide quicker, more efficient connections.

Responses received to our consultation show a preference for efficient markets and benefits that pass through to all customers above the creation of a level playing field or mechanisms that directly benefit individuals.

Provision of services where no market actor is present was universally scored with a lower importance, suggesting our stakeholders are confident that, given the right conditions, markets will deliver the required flexibility.

**ACTION: WPD will work closely with the TSO to ensure we are delivering efficient whole system outcomes as we move towards becoming a DSO.**

**ACTION: We will ensure that neutral markets are developed to make these opportunities available to all customers and that all customers benefit from the efficiency savings.**

**ACTION: WPD will not invest in smart grid flexibility services where the market can do so more economically.**

Within our DSO Strategy and Transition Plan, we outlined the need for incremental roll out of DSO operations and asked our stakeholders whether that was a sensible approach or whether a more aggressive deployment is required.

There was broad agreement that DSO modes of operation would require some level of roll out and acknowledgement that some areas of the

network will not require DSO intervention in the short term due to availability of passive capacity. However, our stakeholders did share a view that the incremental roll out should not be over a long time period and that information on the planned implementation of the rollout should be given to the market in a timely manner.

**ACTION: WPD will continue to publish details of ANM zone deployment and other DSO enabling technologies on its website.**



Western Power Distribution's four-point high level message of its DSO Strategy sets out the two focus areas of smarter EHV and safe and secure LV networks. The extent to which our stakeholders agreed with these objectives varied considerably.

There was agreement that the EHV and sub-transmission networks will be most heavily influenced by the changes within the energy system and that these should be prioritised for smart rollout. However, others expressed concerns that the focus on EHV assets should not come at the detriment of HV and LV networks.

Some respondents strongly preferred a more passive approach to LV networks, stating that conventional reinforcement will definitely be required to achieve long-term energy requirements, whereas other respondents disagreed with this approach, explaining that smart intervention on LV networks could provide significant benefits in ensuring capacity was available despite uncertain levels of LCT uptake.

One consistent message from our stakeholders was that there is a clear expectation for the penetration of smart technologies to percolate through the whole network and not be voltage dependant.

**ACTION: WPD will focus rollout of smart interventions on our EHV networks and prioritise co-ordinated approaches to flexibility that also benefit lower voltage networks.**

**ACTION: WPD will implement smart interventions on lower voltage networks where the highest impact of LCTs is predicted and where the benefits can be co-ordinated across all voltage levels.**

Developing the capability to leverage and co-ordinate customer provided flexibility, as well as maximising the flexibility inherently within the network will be an important part of operating a more active distribution system. In our consultation we acknowledged that flexibility in the energy system would come from a variety of sources and asked what balance of flexibility should be delivered by networks, customers or third party actors.

There was a clear consensus across the consultation responses that the DSO must be a neutral market facilitator and that by doing so, the flexibility will be delivered by whichever party is best placed to offer the required services at a competitive rate.

Some respondents drew attention to the ability of gas system and network operators to use the inherent capability of their networks to provide flexibility for the benefit of all customers.

A number of parties explained the importance of co-ordinated product convergence between DSO, TSO and other market procurers, so that market conflict is reduced. They also commented on the requirement for flexibility providers to maximise the ability to stack a number of revenue streams.

**ACTION: WPD will signpost its flexibility needs ahead of following a technology-agnostic procurement process.**

**ACTION: WPD will co-ordinate with the TSO, suppliers and other procurers of flexibility to avoid market conflicts.**

Understanding where this flexibility may be located and how this can be accessed is a crucial part of aligning our approaches to procurement with the supply from the market. Generally our stakeholders agreed that the likelihood of multiple LCTs being within domestic homes is at least five years out and some responses saw this happening on a much longer timescale.

There was some expectation that the timescales for uptake of LCTs would be greatly influenced by the uptake for electric vehicles. In the industrial and commercial space, our stakeholders agreed that those customers would be ready to provide significant flexibility services within five years, with some stakeholders expecting this to occur in a much shorter time period.

Respondents felt that there is great potential for domestic customers to contribute to flexibility as technology and automation matures within the white goods market. Additionally the extent to which customers adopt smart LCTs will also affect their ability to provide flexibility. Many respondents considered it was important for DSOs to create attractive markets which incentivise customers to participate in providing flexibility; however they also stressed the need for other principles, such as transparency, simplicity and reversibility. Generally, our stakeholders favoured multiple and simultaneous routes to market, available at the choice of the customer.

**ACTION: As the amount of domestically installed capacity increases, WPD will use aggregators or large virtual power plant operators to access flexibility from domestic customers, allowing the market to guide the development of solutions.**

There was general agreement that flexibility from industrial and commercial customers should be accessed through multiple market based solutions, with customers free to participate via their own chosen procurer.

Some respondents acknowledged that it may be necessary for some flexibility to be contracted through tendering exercises rather than market based solutions due to the initial infancy of markets, or the illiquidity of flexibility either due to location or service requirement constraints.

**ACTION: WPD will use a mixture of tenders and market based arrangements to fulfil its flexibility requirements.**



We asked our stakeholders whether our customer facing flexibility products adequately stimulate the market. Most respondents agreed that the existing alternative connections provided by WPD, which enable customers to get quicker, more efficient connections through alternative network access arrangements, have stimulated the connection of DG, but that there is little appetite or incentive for existing connections to transfer to alternative connection terms or participate in capacity sharing arrangements.

Most respondents agreed that once a wider range of market mechanisms are developed by the DSOs, then the market will adequately deliver the required flexibility without further stimulation from the DSOs.

Within the consultation, we presented a number of market models and asked for views on the application and suitability of the divergent options. We received a number contrasting views on the different market models. Some respondents favoured the simplicity of the TSO or DSO led market models, particularly where those were aligned with existing procurement markets. Others valued the potential benefits of a co-ordinated market model driven by price and delivering best whole system outcomes.

Universally, it was acknowledged that the current market model would not deliver the best whole system outcomes to achieve future cost savings. As discussed before, our stakeholders generally favoured multiple and simultaneous routes to market, available at the choice of the customer.

**ACTION: WPD will collaborate with other DSOs and the TSO through the Open Networks Programme to further develop suitable market models.**

## Next Steps and Future Engagement





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