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By email only to flexibility@ofgem.gov.uk

Dear Akshay

DSO Position Paper

Thank you for the opportunity to give feedback on the above consultation. Our response should be treated as consolidated on behalf of UK Power Networks' three distribution licence holding companies: Eastern Power Networks plc, London Power Networks plc, and South Eastern Power Networks plc.

The UK's electricity distribution networks are undergoing the biggest period of change since privatisation. Together DNOs have connected over 32GW of distributed generation (DG), nearly 700MW of electricity storage¹ and around 200,000 Electric Vehicles (EVs)². Of this, UK Power Networks have connected about 31% of (DG) in the UK and 30% of EVs are registered within our distribution area. With cities such as London electrifying faster than elsewhere in response to local government policies such as the Ultra Low Emission Zone, our networks are at the forefront of the energy transition.

In recognition of the key role we play in facilitating new low carbon technology and enabling greater competition in the energy sector, we have significantly adapted our business. The RIIO framework has been a key enabler to this by providing us with flexibility to overcome the challenges faced. As a result we believe the UK is leading the world on the progress it has made towards Distribution System Operation. For example, the regulatory framework has been instrumental in encouraging DNOs to go beyond their traditional ways of working by combining grid modernisation alongside the deployment of innovative network and market based flexibility solutions.

Thanks to progressive and strong regulation, the UK is one of the most attractive places in the world to invest in energy, whether this is in generation, networks or supply. We recognise there has been a move to greater separation of system operation in transmission to address any real or perceived conflicts of interest. Due to the progress we and other DNOs are making on DSO, it is natural that similar questions are being raised about whether this is leading to fair competition and the best outcome for customers.

Our transition from DNO to DSO is not a land grab – the reality is that it is about us evolving to meet the challenges we face today. For example, if we had not rolled out active network management (ANM) and

¹ <http://fes.nationalgrid.com/media/1409/fes-2019.pdf>

² These figures are based on DVLA actuals up to Q2 2019 and then forecasted to present date



provided greater visibility of our network constraints, we would not have been able to connect 6.2GW of renewable generation without us, and our customers, incurring extra costs. Over the first half of RIIO-ED1 we have saved our customers over £70m through flexible connection arrangements. We are also acutely aware that maintaining network reliability is becoming more complex in the emerging system, and therefore we need to expand our toolkit to use smart and flexible services to help us best manage this.

As a demonstration of the progress made, our DSO and Smart Grids team was established in January 2016 and has scaled to 30 FTE by 2019, which has delivered a DSO programme of c.£100m so far in RIIO-ED1. Underpinning this is our drive towards least regret investments that deliver benefits for our customers and is a fundamental pillar of Ofgem's focus on output based regulation.

Examples of our DSO strategy in action are highlighted below:

- We were the first DNO to tender for flexibility in the open market and since then we have tendered for a total of 304MW. This forms part of the commitments we made in our Flexibility Roadmap that was published in 2018 to set out a clear vision of how we will develop local flexibility markets and address local and wider system needs through market products. More specifically, we have committed to open up our system needs to flexibility providers and market test all of our load related reinforcement requirements for the remainder of RIIO-ED1;
- We are rolling out key enabling technology such as ANM and are increasing the visibility of the low voltage networks to enable better system management, offer cheaper connections and enable new markets;
- We are working to enable our customers to access a range of revenue streams, ranging from new tariffs with suppliers such as OVO Energy and Octopus Energy to smartly charge EVs, to a market-based approach to manage constraints in areas with a high concentration of low carbon technology.

Put simply, our DSO transition aims to offer choice and excellent service to our customers, drive competition and enable whole system coordination whilst keeping the lights on. To achieve these objectives in RIIO-ED2, further investment will be required both in technology and systems, but also in organisational capabilities that include the establishment of new processes, skills and ways of working.

We agree with Ofgem that it is too early to formally separate DNO and DSO functions through institutional reform. Without understanding the full-range of consequences, DNO and DSO separation would risk removing accountability for security of supply and would make co-optimising network based and market based options more difficult and costly than otherwise. However, as a DSO that facilitates competition and network access, we recognise that we have a responsibility to provide assurances over our procurement processes, and to remove any perception that we are not neutral.

We are currently working with stakeholders to provide full transparency of our decision-making and we are opening up our network data to support market participants with their own decision-making. We therefore believe that RIIO-ED2 should continue to build on the successes seen in RIIO-ED1 by retaining the totex model for the DSO and evolving the cost-benefit-analysis to strengthen the price signals associated with optionality value. The ENA's Open Networks Project should also continue to be a platform for DNOs to work with industry to ensure that the DSO transition remains on track. This includes providing consistency in the way market participants access DSO-led markets.

Our full response to the questions raised in the DSO position paper are set out as an appendix of this letter. We have also provided greater detail on DSO related questions in our response to Ofgem's Open Letter on RIIO-ED2.

The key points are summarised below:

To ensure the DSO transition meets customers' needs we believe the RIIO-ED2 framework should:

- Provide a framework that enables cost-effective network capacity management through a combination of flexibility markets, access rights and locational network charging;
- Support DNOs in their development of new monitoring, control and IT systems investments that allow the safe operation of the network in a decentralised and decarbonised system;
- Defer any decision to separate the DNO and DSO functions until further evidence and a case for change can be evaluated;
- Support DNOs to adopt best practice on data transparency in a way that accelerates the DSO transition and the customer benefits this brings e.g. by enabling all customers to participate in new flexibility markets;
- Encourage a bottom-up approach to system planning and operation that will incentivise the use of customer-led flexibility;
- Strengthen coordination between DSOs and the ESO; and
- Wherever possible benchmark DSO activities with DNO activities together; for example a blended unit cost on load related reinforcement will mean there is no discrimination between network and market based options.

We hope that you will find our comments helpful. If you have any questions regarding our response please do not hesitate to get in touch. We look forward to working with you over the coming period to ensure that regulatory arrangements continue to support the DSO transition.

Yours sincerely



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Response to questions

Question 1: Do you agree with our strategic outcomes?

Clear boundaries and effective conflict mitigation between monopolies and markets

We support Ofgem's position on ensuring that boundaries are set and that there is complete transparency in the assessment of network options versus market based options. We advocate a set of clear rules which should be applied consistently across all network operators to enable a level playing field for all solution providers. These rules must facilitate leveraging the flexibility that already exists within networks, and provide a framework for assessing the use of new and existing regulated assets against alternative market based solutions. The ongoing work on whole system (via the ENA's Open Networks Project) is tackling these challenges and should be used to inform these rules. The effectiveness that can be gleaned from having optionality across a range of network solutions will hinge on fit for purpose routes to funding.

Effective competition for balancing and ancillary services, and other markets

The availability and transparency of data across relevant parties will be key to the efficient use of flexibility. Distribution electricity networks are becoming more digital and open with the increasing use of ANM systems and market based services in place of traditional reinforcement schemes. Greater coordination between network operators and access to information is required to mitigate conflicts between services and to ensure efficient whole system outcomes. Please refer to question 3 below for further detail on why clarification of market design is also important.

Neutral tendering of network management and reinforcement requirements, with a level playing field between traditional and alternative solutions

We recognise that it is essential to develop a clear and transparent set of rules to ensure that the maximum flexibility potential from both network and market based options can be realised. The ongoing work through the ENA's Open Networks Whole System product is currently tackling this by ensuring a level playing field is achieved. This includes the development of a CBA that accounts for the differences in contracting with non-regulated and regulated parties. This is also helping to address challenges such as how to define a methodology that fairly assesses network assets against market options, as well as how the system need can be transparently shown to the market to discover the most cost efficient option.

Strongly embedded whole electricity system outcomes

UK Power Networks is continuing to work closely with the ESO, TOs and the other DNOs to leverage whole system benefits. The Regional Development Programme in the South East of England has provided the basis for what is now being further developed through the ENA's Open Networks Project. We believe whole system efficiencies will require:

- earlier and improved data sharing;
- clarity on funding routes; and
- clarity on the rules applicable to produce a fair and transparent CBA across a range of options.

Question 2: Do you agree that our work programme will help to deliver the strategic outcomes?

DNOs and new contestable services

We welcome Ofgem providing clarity on the use of network flexibility. Clearly, there is great potential for flexing network assets to mitigate constraints across the electricity system. Where opportunities lie for markets to evolve and provide optionality, a clear approach to optimising the use of both network flexibility

and commercial flexibility will need to be defined i.e. how does the use of network flexibility affect the market and vice versa.

Key enablers for DSO functions

The identified enablers resonate both with the work being prioritised via the ENA's Open Networks Project and within UK Power Networks. We recognise that clarity on DSO functionality will need to be derived where these enablers either build upon or are inherent in currently funded business as usual activities. We agree with the proposed timeline. However, it is worth being cognisant that work which involves code modifications and/or development of new ICT platforms can be complex and resource intensive. Consideration should also be given as to what activities can be delivered within current frameworks and what is better placed to be delivered over time and into RIIO-ED2 and beyond.

Development of coordinated flexibility markets

We have actively pursued flexibility contracts to defer traditional reinforcement schemes and currently have over 18MW contracted capacity, with the commitment to run procurement events on an annual basis. As leading participants in informing the ENA's Open Networks Project, we continue to evolve product definitions and contractual terms. This is helping to facilitate joint procurement and the harmonisation of procurement activities. We believe this work should be further informed by our work with National Grid in our southern region. We are testing through both innovation (i.e. Power Potential) and business as usual activities (i.e. Regional Development Programme) how best to optimise DER on distribution networks so that simple access to both distribution and transmission services is attainable. This work also looks to address how and who is best placed to manage service conflicts and optimise the dispatch of services on distribution networks.

We have heard from our stakeholders that getting a level of consistency between how DNOs are procuring for flexibility is important as this will make these markets easier to access. This includes product definition, the CBA methodology, contract lengths and the auction format. Whilst there has been clear value in taking a learning by doing approach and testing different approaches to what is a new area for both DNOs and market players, we are fully committed towards getting alignment between DNOs. We believe that the transition from RIIO-ED1 to RIIO-ED2 is the right time to do this and the ENA's Open Networks Project is the right place for this to be progressed.

Question 3: Do you have anything to add to the thinking and analysis that informs how we propose to deliver our programme of work?

We believe the roadmap should continue to be evolved to consider the timing and prioritisation of activities, and highlight where least regrets opportunities could exist.

As highlighted in our earlier response, it would be useful to breakdown into a more granular description activities expected to be delivered via the DSO and how they are set apart from current activities undertaken by DNOs. It is also crucial that timely positions on key areas that will affect the DNO's business plan are achieved so as to better inform our RIIO-ED2 submissions. Equally, early identification of areas that can be progressed under the current price control framework is required.

Below we have included two areas that we believe require further consideration:

Market design

The DSO transition will have far reaching impacts on the wider energy market. We therefore believe that Ofgem's work programme should include greater consideration of how DSO related activities will interact with other market structures and how these could be re-designed to ensure customer benefits are maximised. For example, there is an opportunity to evolve market arrangements to create short-term price signals for flexibility at the distribution level, which will unlock new opportunities for new smart and flexible

technology. Consideration is therefore needed on how these price signals and any DSO-led products will integrate into arrangements such as the Balancing Mechanism and ESO's Ancillary Services market.

Recognising the wider value that DSOs can provide

Due to the energy transition being focused within electricity distribution, DSOs have the ability to offset costs that go beyond this sector alone. For example, if the trend towards distributed Solar PV and electricity storage continues as a replacement to large coal fired power, then ensuring that these new low carbon technologies can connect and generate with minimal cost and disruption, will have important wider benefits. Through DSO-led markets there is a significant opportunity to co-optimize resources at the local level in a way that reduces the need for investment in additional generation and network reinforcement at the transmission level. Moreover, this bottom-up approach to system operation and planning will lead to reduced customer bills and more affordable low carbon technology. However, to achieve this will require consideration of how investment in systems at the DSO level e.g. through RIIO-ED2, can result in total costs going down leading to a net benefit to customers.

As more low carbon technology connects to our electricity distribution network, there is a greater need for coordination across system boundaries. Crucially, this should aim to measure cross system flows and impacts and therefore the changing cost drivers. Failure to do this will lead to sub-optimal decision-making and risks creating delays or additional costs to decarbonise the energy system. For example, Imperial College's analysis identified that an additional spend of up to £40bn will be required if we fail to co-optimize assets and connected resources across the system. DNO and DSO activities not only reduce potential capital expenditure in electricity distribution but they also defer and avoid the need for expenditure across transmission and for generation capacity.

Finally, UK Power Networks is continuously reviewing its DSO strategy to ensure it remains fit for purpose as the market continues to develop and evolve. Much of the progress we have made is thanks to the invaluable engagement we have had with stakeholders who have challenged us to think in new ways. To successfully navigate through the complex changes distribution networks face we believe strong collaboration between industry, Ofgem and DNOs is critical. We therefore welcome Ofgem to consider how we can build on forums such as the ENA's Open Networks Project to strengthen joint thinking in this area.