
DSO Performance Panel – call for evidence non-confidential response summary May 2025

Respondent #1

Over the last 9 months my team have been working closely with UKPN DSO and ESO to deliver the Megawatt Dispatch service. I am also Kyndryl's appointed executive sponsor of the UKPN Megawatt Dispatch project delivery.

The reason for my letter is that UKPN have asked me if I would submit some feedback, which I am happy to do.

In terms of Kyndryl (NYSE: KD), we are the world's largest IT infrastructure services provider serving thousands of enterprise customers in more than 60 countries. Our company designs, builds, manages and modernises the complex, mission-critical information systems that the world depends on every day.

Furthermore, I am proud to say we have a strong partnership with UKPN and fully support the DSO's goal of providing flexible capacity in the future world of net zero carbon electricity production. The Megawatt Dispatch Project is a fantastic example of this goal in-action and forms the basis of my feedback. For more on UKPN Kyndryl partnership please click [here](#).

The following feedback that I offer is my personal view and is based on my direct and detailed involvement in the Megawatt dispatch project. It hopefully provides a different perspective on the value and performance of the UKPN DSO.

Megawatt Dispatch Minimal Viable Product (MVP)

Megawatt Dispatch MVP was delivered in March 2024 by UKPN and Kyndryl in collaboration with the National Grid ESO. It was designed to help the National Grid ESO and UK Power Networks DSO to accelerate the connection of new sources of renewable energy, whilst keeping within existing transmission limits.

Delivery of DSO benefits

The Megawatt Dispatch platform represents a significant step forward in providing flexible capacity in the future world of net zero carbon electricity production. But what is also interesting, is the way in which the platform was delivered and the factors that contributed to its success. Moreover, UKPN has up-skilled in the process; an investment that will pay dividends on future

projects. Other DSOs can learn from this exemplar. Here is a summary of the success factors”:

- **Agile ways of working** - The project was delivered in sprints and took 9 months to design, deliver, test and operationalise. UKPN did not have significant agile skills but wanted to use the MVP as a way of delivering differently. A key outcome of this project has been to up-skill UKPN.
- **Business led** - The project was led by UKPN DSO, and involved close collaboration between UKPN IT, Kyndryl, ESO and DERs. The DSO’s clear articulation of the business requirements was a major success factor.
- **Enough upfront design** - UKPN DSO provided the business domain experts and initial high-level architectural designs. This bootstrapped the project allowing the engineering squads to gain velocity rapidly.
- **Experienced squad members** - Kyndryl provided the skills and capability to deliver and operate the end-to-end solution. The combination of experienced software engineers (who had worked with each other prior to this project) coupled with UKPN DSO team who had a deep understanding of the business domain, made a big difference.
- **DevSecOps approach** - Kyndryl automated the delivery of the platform from the start of the project. This allowed software changes to be rapidly coded, deployed and tested. We also reduced operational risk by embedding operations engineers into the delivery from the start. This is another key tenant of DevSecOps.
- **Product & platform approach** - We chose a product & platform approach to accelerate delivery and ongoing scaling and enhancements. This again represents a DSO investment which will contribute to further efficiencies in future releases.
- **Cloud native services** - The project took a cloud native approach, reusing “out the box” Azure cloud services. This allowed the developers to focus on business functionality.
- **Cross organisation SteerCo** - A major success factor was the setup of a cross organisational SteerCo which had representation from UKPN DSO, UKPN IT and Kyndryl. This provided a mechanism for the team to escalate and resolved blockers that were stopping then progressing.

The MW Dispatch MVP was a balance between operational stability and security, while delivering a meaningful product to the market, on-time and within budget. Our success was down to a “one team mentality” & “can do attitude”.

Data and information benefits

The MW Dispatch platform is essentially an API and Integration platform that connects the ESO to the DERs in real-time. The data flows are all delivered using Restful APIs. The data is stored securely in a relational database. The approach and platform is reusable and could be reused by other DSOs to implement the Regional Development Programme. This is an area that UKPN DSO can help other DSOs, helping the UK meet its net zero carbon targets. Moreover, the APIs can be used by other stakeholders to innovate and create insights that can

future improve the service to the customer. The agile approach methodology will also be a useful approach for other DSOs.

Flexibility market development

The platform allows DERs to participate in the National Grid ESO flexible market, encouraging the production of renewables. While further enhancements are planned, this represents a significant step forward. As data is gathered over the next year the benefit and insights will become clear.

Distributed energy resources (DER) dispatch decision-making

The platform is designed to solve this problem and we should be able to establish its efficacy as the project progresses.

To conclude I think UKPN is pioneering in the traditional utility space delivering cross-org smart grid project at PACE in months rather than years. The value that the Megawatt Dispatch MVP provides can be summarised into three points:

- It directly helps the DSO's primary goal of providing flexible capacity in the future world of net zero carbon electricity production; i.e it will accelerate the connection of renewable energy, allow surplus energy to be better used to balance the grid, allow DERs to participate in ESO flexible market and allow outages / peak demand to be managed more effectively.
- It also significantly "shifts the dial" in terms of the speed in which the ESO and UKPN DSO can deliver innovation. i.e. new ways of working, adopting advanced cloud native applications, microservices architecture. and a one team mentality. adopting advanced cloud native applications, microservices architecture and delivering cross-org smart grid project at PACE , delivering in months that would otherwise would have taken years.
- The platform, approach and experience can be leveraged by other DSOs to also provide flexible capacity, faster innovation and upskilling.

Hopefully, this provides some good feedback that you will find useful in your assessment of the UKPN DSO's performance. Please don't hesitate to get in touch if you have any other questions. I am happy to do a call if required.

Respondent #2

I would like to provide feedback on the UKPN for the DSO Performance Panel

In general, I have found that UPKN's mapping tool and also data visibility is really good and easy to interface with

Respondent #3

The remainder of this document will provide feedback on our experience with working with the DSO, and the change we have felt as consultants since the DSO was setup ~1 year ago.

Delivery of DSO benefits

Level of Ambition

UKPN DSO have been extremely ambitious in implementing positive changes that would facilitate an easier connections process for our clients/help us as consultants access the information we need. When we first spoke shortly after the DSO formation they were extremely receptive to all ideas we gave them, and they clearly wanted to do as much as possible to improve. However, they are not only very good at being reactive to our ideas, they are clearly also very proactive and, in our opinion, have produced an excellent roadmap of changes.

Benefits Realisation

Have felt a clear difference in working with UKPN since the formation of the DSO, and as an example, the time for performing independent curtailment assessments for clients has been reduced by weeks in many cases, thanks to not having to wait on data. Data such as Technical Limits values for each GSP, historic EHV outage events, loadings for both circuits and transformers have been extremely helpful and UKPN have set the gold standard for the data we can expect from the DSOs.

Data and information provision

Scope, granularity and accuracy of data

Have felt that UKPN have gone above and beyond to ensure we can get as much data as possible in terms of variety and time period, granularity (i.e., removing redactions where possible), and ensuring the data is accurate by for example aligning the direction of line loadings from node 1 to node 2.

Respondent #4

I am writing to share my stakeholder input for the call for evidence, based on my observations of Electricity North West's (ENWL) performance during

2023/24. With regards to assessment criteria: Flexibility market development and Facilitation of market access my observations are as follows:

- ENWL's selection of ElectronConnect demonstrates their commitment to innovation and leadership in the development of flexibility markets - this partnership will enable ENWL to launch, operate and coordinate multiple markets for flexibility across various technology types, levels of the network, and timescales
- ENWL's collaboration with ElectronConnect and PicloMax aims to improve the experience for Flexibility Service Providers by enabling greater choice and therefore maximising competition, innovation and ultimately participation in flexibility markets.
- ENWL's work on BiTraDER demonstrates further flexibility market development by pioneering asset-to-asset (ie bilateral) trading live on the ENWL network. Secondary trading such as this is a vital tool in creating additional capacity on the network.

I believe that ENWL has met the standard of excellent performance (score 9+). Thank you for giving stakeholders like me the opportunity to submit feedback directly to you and for considering my comments in the round with other evidence presented.

Respondent #5

Following the call for stakeholder evidence regard the performance of DSO interactions that have taken place over 23/24 period, I would like to add my feedback on the performance of UKPN DSO.

I have found the interactions I have had with the UKPN DSO particularly useful, especially in the delivery of data and information. Having worked closely with the UKPN DSO in a number of collaborative areas, these have been carried out in the spirit of whole system cooperation and shared goals, ultimately leading to benefits for consumers.

I hope you find these comments useful.

Respondent #6

I am writing to share my stakeholder input for the call for evidence, based on my observations of Electricity North West's (ENWL) performance during 2023/24 and as a member of ENWL's DSO Stakeholder Panel.

I would say that the overall DSO performance has been Good/Excellent. ENWL has listened to stakeholders and is trying to be open and transparent, I think the link between the DSO and DNO needs to be closer to ensure that the DSO can have the greatest impact on the network.

- **Delivery of DSO benefits – Good (7-8).** ENWL demonstrates a good level of ambition and have considered all users of the network in their planning and delivery of DSO benefits. Plans that have been discussed will result in more transparency and accountability meaning improved service levels for users/customers. The realisation of the benefits proposed at a strategic level seem well documented and impactful, however, the impact on individual customers and the way the DSO interacts and works with DNO seems less visible and this is an area that ENWL could focus on to show how DSO will impact all users going forward.
- **Data and information provision – Excellent (9+).** ENWL's data portal and access to up-to-date data and information is a great addition to the standard data sets that are available and the publications that are produced. This is because having access to network data and constraint issues will help with future planning and developments for Bruntwood and other users of the network. The data provided gives a true reflection of the network, and the creation of 'how-to' user guides will make the data more accessible and easier to understand for all.
- **Flexibility market development – Average (5-6).** ENWL is meeting all the standard criteria for Flex services however the uptake seems to be low. This is not necessarily a failing of ENWL but more education and thought needs to go into how they can help more people unlock flex and improve uptake/participation. The introduction of the new online portal and partnership may help this, but a key focus area could be smaller generators and individuals.
- **Options assessment and conflicts of interest mitigation – Good (7-8).** ENWL has a clear understanding of what is needed and a methodology to resolve strategic network needs. The processes followed will mean that the network is better managed and organised, but this will only happen if the DSO and DNO work closely to ensure that users connecting to the network or using the network are fully informed of all options, not just the least cost option when placing orders. Lowest cost may not always be the best option for NZC and socialised costs need to be avoided wherever possible.

Thank you for giving stakeholders the opportunity to submit feedback directly to you and for considering my comments in the round with other evidence presented.

Respondent #7

Citizens Advice Manchester (CAM) are ENWL's strategic partner for fuel poverty support across the North West. We sit on the company's strategic 'voice of the customer' stakeholder panel, take part in DSO stakeholder events and provide input and challenge to DSO initiatives – primarily from the perspective of customers that are at risk of being left behind in the energy transition.

I am writing to share my stakeholder input for the call for evidence, based on my observations of Electricity North West's (ENWL) performance during 2023/24.

With regards to assessment criteria:

- Delivery of DSO benefits: Level of ambition.
- Data and information benefits: Scope, granularity and accuracy of data.

And scoring criteria:

- Consideration of the impact of DSO activities on different types of consumers, network users and the wider energy system (including carbon emissions).
- Clear evidence that the distribution network company is taking steps to improve data quality, with processes in place to address gaps in datasets and drive up standards.
- The distribution network company has considered how to adapt data and information provision to DSO Stakeholders' needs.

My observations are as follows:

- The lower-than-anticipated uptake of low carbon technologies in the North West is unsurprising given the current economic climate and aligns with our observations on the ground. Energy affordability has become a key concern for our clients, necessitating in-depth support to maximise their income and alleviate financial strain on household budgets.
- ENWL has taken a strategic decision, informed by support from stakeholders like ourselves, to not invest in flexibility ahead of need, thereby protecting value for money for customers.
- ENWL has demonstrated a thoughtful consideration of the impact of DSO activities on various consumer types, network users, and the broader energy system through its development of stakeholder personas. This approach has visibly influenced the design of initiatives, resulting in improved service delivery for these personas.
- We have emphasised to ENWL that individuals may identify with multiple personas, and we are pleased to learn that the company intends (as discussed at their recent conference) to create additional sub-personas. These initiatives are designed to track satisfaction levels and report on the diverse range of benefits delivered to each persona in their annual reporting. We wholeheartedly support this ambitious approach and commitment to transparency.

- Through our partnership with ENWL in supporting fuel-poor customers and those vulnerable to being left behind in the energy transition, we have seen evidence that their method for quantifying benefits aligns with established standards and practices.
- Last year, we were highly impressed by the industry collaboration led by ENWL, alongside other Distribution Network Operators and the proactive involvement of our national Citizens Advice Team in standardising social value measurement for SECV reporting. We are eager for ENWL to extend this collaborative spirit to the DSO Incentive, enabling consumers, their representatives, and stakeholders to benchmark industry performance fairly.
- Over time, we have witnessed a culture at ENWL dedicated to achieving high standards of data quality and precision. This commitment is evident in their meticulous treatment of Priority Services Register data, where equal emphasis is placed on data cleansing as well as onboarding new members. We also observe this same dedication being applied to DSO information. Ultimately, this approach fosters greater trust and confidence in using ENWL's data for organisational decision-making purposes.

I have no hesitation in saying that ENWL has at minimum achieved the baseline standard of average performance for delivery of DSO benefits (score of 6) and is poised to reach a 'good' level soon. ENWL already appears to be at 'good' (score of 7-8) for data and information provision.

Thank you for providing stakeholders like myself with the chance to directly submit feedback and for considering my comments alongside other evidence presented.

Respondent #8

I am sending the below feedback for the above mentioned subject:

1) UKPN DSO stood out as the one for innovation and collaboration. The team at UKPN, whether they are the connection's team, or the flexibility team go out of their way to help us as the customer utilising all available resource. The leadership team such as the Director of Connections are also very supportive and approachable, empowering their engineers and delivery team to work with the customers.

The flexibility team have been proactive in engaging with us the customer from early stages of the connecting project to understand the timescale, challenges and connection technology. We had numerous sessions on understanding the details of battery storage and how the assets are going to be traded in the

application market. They are always keen and go out of their way to study the real impact on their network, in order to work out alternative connecting solutions to benefit the customer, whilst protecting the integrity of the network.

2) UKPN DSO has demonstrated real initiatives in flexibility market. They were determined to turn perceived “issues” into “opportunities”. This speaks for the team that has a real interest in providing added value to connecting customers and ultimately consumers. They listen to their customer’s feedback carefully and take actions to address the feedback. They are also good at keeping stakeholders updated in any progress they have made along the way.

3) I think they set a good example for other ESOs on the willingness to innovate and collaborate with customers, and how approachable they are for their customers.

Respondent #9

Please find below feedback on the performance of UK Power Networks in relation to the current call for evidence on DSO performance. This feedback specifically relates to data and information benefits and the work of the net zero carbon team and development of the “Your Local Net Zero Hub” web platform. The development of this platform has been hugely positive for us in how we access data related to the grid in our area, and is of significant importance given that we, alongside other local authorities in the Cambridgeshire area, are now developing a Local Area Energy Plan. The hubs development, and the level of support provided by the local net zero team in using the hub has not only advanced our understanding of the current status of the electricity network that serves our area, which is vital for infrastructure planning, but has also provided an easier route for us to share emerging net zero carbon projects with UKPN so that these can be accounted for in network business planning. Members of the UKPN team are playing in active role in the development of our Local Area Energy Plan and we will be utilising the hub as the plan develops and as technical work gets underway. We will also be using the hub to share information about key decarbonisation projects, such as our emerging district heat network project, which will enable us to provide UKPN with early visibility of this project to help ensure that as the project develops to the delivery phase, we can ensure that grid capacity is considered as early as possible. From an infrastructure planning perspective, and as part of our work on strategic planning for the Cambridge and South Cambridgeshire area, I would go as far as to say that the hub has the potential to transform our approach to energy infrastructure, an area that has in previous years been difficult to fully integrate into our infrastructure delivery plans. This is an approach that I would

recommend, be rolled out across DSOs to ensure a consistent approach to aligning strategic planning with DSO business planning.

Respondent #10

Thank you for the opportunity to respond to the call for evidence regarding DSO performance. We would like to provide our views on the progress that UKPN has made with respect to the efficient use of their networks through considering flexible alternatives to network reinforcement.

We consider the progress made in GB outstrips all the markets that we operate in across Europe. The regulatory environment has encouraged the DNOs to promote the use of flexibility and we were delighted to be chosen by UKPN to be the first business-as-usual, market-based solution for the procurement of their day-ahead flexibility. This is groundbreaking and European System Operators see UKPN as a North Star for market-based flexibility procurement.

The UKPN Localflex market aligns with our role within the wholesale market. It promotes a simple, transparent and repeatable auction-based markets. This allows FSPs to easily understand and to trust the market to maximise their commercial investments. We see the next step to promote the stacking options between local flexibility markets, wholesale and ESO markets. This stackability will grow market participation and maximise the value of each flexible kW. To that end, we are thankful for the letter of support that UKPN (alongside NGED and Scottish Power) provided to our Flex Markets Unlocked innovation project, e-gate.

We would like to see the regulator encourage the continuation of the Open Networks project to formalise standards and rules which will allow for the interoperability for FSPs to navigate between markets offering the most value. At the same time, we would also encourage Open Networks to base their work on the CIM standards as much as possible and to avoid redesigning the wheel. We do not believe that either centralised dispatch or large central flexibility architecture is needed to unlock flexibility. We believe both are oversized solutions that do not have a certainty in results to justify their obvious expense (in both time and price tag).

Assessment criteria: Design of distribution flexibility products, contracts and processes

Average (5-6)	The distribution network company's distribution flexibility services products, contracts, and qualification criteria are standardised. Where not, credible justification is provided	UKPN's Localflex market uses the standardised products set by the ENA. The framework agreement and the commercial information and asset information is 100% aligned to ENA standards
	The distribution network company is following industry standard practice, eg, implementing Open Network Project deliverables. Where this is not the case a credible justification is provided	As per the above UKPN's Localflex market uses ENA standards. We'd highlight that Open Networks are not the only standards that the DNOs should be considering. We would like to see CIM interoperability (used for data exchange).
	Extensive DSO Stakeholder engagement has been undertaken to identify and address key issues hindering flexibility market development	UKPN ran a consultation; whole-systems co-design panel (2020); industry forums
	The distribution network company can demonstrate it has avoided proprietary systems	Open tender for Localflex
Good (7-8)	The distribution network company has implemented in full the current set of Open Network Project deliverables, and made improvements in response to DSO Stakeholder feedback	UKPN have strictly implemented the Open Network deliverables. We expect settlement and dispatch standardisation to follow once finalised by Open Networks. They have followed everything that has already been published.
	Clear evidence that the distribution network company is unlocking the value of flex and energy efficiency in more nascent areas, eg, constraints on the secondary (LV and HV) network	The commitment to day-ahead auctions is to unlock flexibility. FSPs are currently registering assets with the first commercial auction due to run in Q2 2024. UKPN are committed to providing value for energy efficiency by procuring the Peak Reduction product (formally SUSTAIN).
	Clear plans to enable secondary trading of flexibility and curtailment obligations to be fulfilled	In our experience in GB and across Europe we do not see this as a key deliverable in the near term. The immediate focus is on making the primary auctions successful.
Excellent (9+)	The distribution network company is setting an industry leading benchmark for distribution flexibility products, contracts and processes	UKPN are the most ambitious, global leader of commercial deployment of flexibility schemes. They are the first DSO to procure DA flexibility.

Assessment criteria: Facilitation of market access

Average (5-6)	Clear explanation of how the distribution network company is enabling third parties to provide market support services and platform services	Ran a transparent tender process to procure a market platform and market support services for their day-ahead and long-term flexibility procurement.
	Clear evidence that the distribution network company has undertaken initiatives to improve market access and enabling simple, cost-efficient participation have been effective	UKPN has committed to using the standardised outputs from Open Networks and selected EPEX Spot to develop and run its auction platform leveraging its experience of operating the near-term GB wholesale markets. The standardised DA procurement process via an auction platform supported by standardised market operation processes allows the scalability of flexibility engagement.
	Limited exclusivity clauses with credible justification where used	We are not aware of any restriction on the products offered by UKPN. The platform does not restrict the participation based on any exclusivity requirements.
Good (7-8)	The distribution network company is demonstrably providing operational data to the GB System Operator and other distribution network companies in a practical and accessible way (for instance via an Intercontrol Center Communications Protocol (ICCP) link) to provide visibility and to coordinate / avoid conflicts	[not applicable]
	The distribution network company can demonstrate that its commercial arrangements with DER enable better coordination with the GB System Operator	UKPN dispatch at the DA stage which allows better coordination. FSPs can therefore finalise their position before GTC which is not possible when dispatch instructions are sent 15 minutes before delivery as in other DSO markets.
Excellent (9+)	Clear evidence that the distribution network company's ambition extends beyond delivering distribution flexibility (for network minimisation, management and restoration) to enabling and facilitate flexibility for system optimisation	UKPN see the value of joining up local flexibility markets with wholesale and ESO markets, to grow participation and maximise the value of each flexible kW. Commitment to standardisation and day-ahead procurement allows the growth/stackability of these markets alongside other flexibility. They have provided letters of support for the e-gate innovation project as mentioned earlier.

Respondent #11

I am writing to share my stakeholder input for the call for evidence, based on my observations of Electricity North West's (ENWL) performance during 2023/24 and as a member of ENWL's DSO Stakeholder Panel.

Performance overall has been good (score 7-8) and there is scope to progress to excellent once the framework is fully functioning and benefits can be fully realised and quantified.

- ENWL's approach to the DSO is evolving with continual learning being embedded to improve performance and understand stakeholders' needs. Some more learning can be embedded through the options assessment to inform decision-making.
- ENWL has worked with stakeholders to define and develop a comprehensive programme, overseen by an independent panel representative of its stakeholder base and including members covering the whole energy system.
- The DSO Panel has been comprehensively informed of the role of the DSO and its forward plan and had an ability to shape and feedback concerns or challenges to the approach.
- It is clear in the early stages of ED2 that the role of the DSO is evolving and ENWL is proactively embedding feedback to continually learn and develop concepts and its role in delivering flexibility services to meet stakeholders' needs.
- Importantly, ENWL have developed and communicated the anticipated benefits of their approach and communicated these with stakeholders and a clear framework of options assessment and been communicated to inform how decision making will evolve.

Thank you for giving stakeholders the opportunity to submit feedback directly to you and for considering my comments in the round with other evidence presented.

Respondent #12

The DSO Performance Panel recently asked for an independent view on what the DSOs have achieved in the first year of ED2, and we noted the call for evidence. [DSO Performance Panel – call for stakeholder evidence and membership announcement | Ofgem](#)

This is my feedback.

1. What has UKPN DSO done that has stood out?
 - Leadership with NGESO in the Power Responsive initiative back to 2016

- We have been approached and have discussed with UKPN since 2019 the possibility for peak shaving (at first) and latterly local flexible networks. Eelpower has enjoyed numerous sessions on understanding the details of battery storage and how the assets are going to be traded. UKPN are always keen to study and share insight into the real impact on their network in order to work out alternative connecting solutions to benefit the consumer while protecting network integrity.
- UKPN ran a novel and innovative tender for flexibility services in (?) 2020-21 and spent a significant investment to educate and encourage flexibility players to understand and participate (which we did – Halesworth BESS is a participant in this scheme)
- Communication over the complex and wide-ranging impacts of the shortcomings of the grid links between Essex/Suffolk and London and its impact on new connections – for example, I do not know of a better and more reliable communication programme than that run by Steve Halsey, Nigel Hughes around the problems and how we, as connected assets, need to plan and work around (the “Regional Development Programme East of England” programme since winter 2021-22.
- UKPN has been (in the words of our Head of Operations) “*proactive in engaging with us the customer from early stages of the connecting project to understand the timescale, challenges and connection technology.*”
- The connections team led by the Director of Connections, Mark Adolphus, and Mark himself, has been a consistent support in a difficult and complex project - BESS are significantly more complex to commission and connect than many other generators, and Eelpower has benefited from support from the Connections team in East Anglia at every step of the way. We are very grateful.
- The Head of the DSO, even the fact that UKPN has identified to fill such a role, is a stand out in the GB market. Sotiris Georgiopoulos has been able to express a vision for the sort of local System Operator without which the grid will fail to deliver decarbonisation. I should add that the evident determination by the CEO, Basil Scarsella, to lead in this area, is vital.
- The Head of the DSO has proposed to Eelpower that they visit our Halesworth BESS for a visit and induction, and we follow that with a visit to their Ipswich control centre.
- UKPN DSO has demonstrated real initiatives in flexibility market and done so on its own technology and management initiatives (versus outsourcing to less adequate, light, third-party platforms)

2. How has it helped you and the wider industry?

- We have formed close working relations with the connections team and this has enabled us to react to setbacks, which are inevitable, and even to major crises such as those around the GB-wide failure of two EPC companies in July 2023 – one of these was the EPC for our project, and Eelpower was able to get back to work faster than

other owner-builders, in part because of the support of UKPN staff.

- The openness with which issues are always dealt with is a model – that builds trust and enables change. Without trust, there will be no change.
- UKPN have been good at keeping stakeholders updated in any progress they have made, which helps us to plan. The situation in East Anglia is not perfect, but by sharing it openly, we have all been able to manage.

3. What are we doing that you would like to see other networks do?

- Communicate, communicate, communicate. At a recent review, the UKPN team asked “how [UKPN’s] communication on the Two Step process compared with other DNOs” – everyone on the call said “it’s better” and some even said “I don’t know, our DNO does not communicate”. We are going to need to understand a great deal more about the challenges facing the GB distribution networks if we are to help; likewise, the DSOs are going to benefit from learning from us how flexible BESS assets
- Develop and tender new flexible offerings and opportunities for flexible battery assets to provide (and be paid for providing) flexibility services.
- Innovation through collaboration with Eelpower and other innovator-pioneers.

I hope that is helpful. Any further questions, please do not hesitate to ask.

Respondent #13

Network's DSO to undertake subregional Local Area Energy Planning in London. In London, the Mayor is funding the delivery of four LAEPs covering all 33 local authorities, from steps 1-4 (based on the Energy Systems Catapult 7-step LAEP methodology).

In our view, UKPN is going above and beyond to support LAEP delivery in London. We are working together to ensure that UKPN and the GLA's digital tools are interoperable and share data efficiently so that London's local authorities have a smooth journey sharing their information. UKPN's support to boroughs is particularly useful as boroughs take forward the second stage of the LAEP process (steps 5-7), after the subregional stage is complete. Many boroughs cannot afford consultants to complete the process, and UKPN's offer allows them to still make good progress completing the LAEP for their local area.

Respondent #14

DNO performance – National Highways response

On 28 March 2024 Ofgem requested stakeholder input to their call for evidence DSO Performance Panel Call for Evidence⁶. National Highways has been engaging with the six Distribution Network Operators (DNO) across England as part of our role under the RCF since April 2023:

- UK Power Networks (all license areas)
- Scottish & Sothern Energy Networks (Southern licence area)
- Scottish Power Energy Networks (Manweb licence area)
- National Grid Electricity Distribution (all license areas except South Wales)
- Energy Northwest
- Northern Power Grid

Since the RCF pilot programme opened in December 2023 our level of engagement varies across the DNOs, depending on where Motorway Service Area Operators (MSAO) are located and the progress of them in the pilot application process. Through our regular engagement with the DNOs, bilaterally under a Letter of Authority (LoA) and via shared weekly meetings with OZEV, we are confident each DNO is committed to support the uptake of EVs, but we have observed areas where we believe improvements can be made, this response sets these out.

Noting the areas which Ofgem seeking feedback from stakeholders on, we have organised our responses under following areas, which are most relevant to National Highways' engagement with the DNOs:

- Options assessment and conflicts of interest mitigation
- Data and information benefits
- Flexibility market development

The following comments are general to all DNOs and highlight areas where we have observed challenges and where improvements could be made.

Options assessment and conflicts of interest mitigation

Key to deliverability of the RCF is for the DNOs to be able to efficiently evaluate connection options to meet customer demand in a timely manner:

1. The most significant challenge we face is the timelines for MSAOs to connect to the DNO network. Increasing the speed of connections for EV

charging would increase EV uptake and reduce UK carbon emission. We note the ongoing reforms to the regulatory connection's framework, such as queue management, which are looking to speed up the connections process and National Highways is ready to support these. An area where DNOs could improve and speed up the connection process is reducing the inconsistency in service level, occasionally within DNO company but markedly across license areas. Working with MSAOs, who operate across DNO boundaries, we have noted that these inconsistencies can cause confusion and potentially led to inefficient outcomes. An example of this is in the pace of the initial connections process, both to make an offer and the validity of that offer, with different timescales across the DNOs. Having a timelier consistent approach across the DNOs would allow for more efficient investment of the RCF. We believe there is a role for the Energy Networks Association (ENA) to support the DNOs promoting best practice and will continue to work with them alongside OZEV.

2. We have observed increased use of Independent Connection Providers (ICP) and Independent Distribution Network Operators (IDNO) across the MSAOs when considering connection options for EV charging. Ensuring the DNO and IDNO relationship (interactions and hand-offs) is working well will be key for efficient connections of EV chargers. Given the larger than average connection voltages required at MSAOs (to future proof for EV uptake to 2035 and beyond) we need to have confidence that IDNOs are appropriately regulated here. For example, there is a risk that their charging methodology is incentivising IDNO capex build by increasing longer term Use of System (UoS) charges. This would have the effect of potentially creating more expensive EV charging than otherwise at MSAOs, risking the wider uptake of EVs. To avoid this scenario, ensuring a level playing field for IDNOs and DNOs at higher voltage levels and ensuring that regulations managing DNO and IDNO interactions are appropriate and are focused on customers. There is an opportunity for the Independent Network Association (INA) to support.
3. There are various ways in which the DNOs can support the uptake of EVs, one way is to reinforce the wider network (working with transmission owners and the Electricity System Operator (ESO), ahead of need, to meet net-zero targets and allow faster connections in the longer term. While this will reduce the cost for the connection customer and the need for public sector investment, it will increase the cost for the energy bill payer. An example of this is a DNO reinforcing their network close to an MSAO, allowing a commercial connection solution, rather than the MSAO using RCF funds for the connection. The balance between Government support and the energy bill payer needs to be carefully considered by Ofgem so that all energy customers benefit from the transition to net-zero.

Data and information benefits

Having access to good quality data, for example network plans and capacity maps, from the DNOs is essential to allow customers to make informed investment decisions.

4. National Highways welcomes the availability of open data, however we have noted a variation in the quality of data across the DNOs, with the majority the data being high level and focused on the needs of generation customers. The DNOs providing access to high quality data, such as capacity maps and substation status, will allow customers to support a more integrated and informed approach to planning.
5. To ensure that connection customers are making optimal decisions, having better visibility of significant regulatory changes to the energy industry which effect DNO demand connections would be of benefit to customers. In particular, for customers in the EV charging sector, given they are relatively new entrants, and they may have knowledge gaps when compared to long standing industry players. An example of this is last year's Significant Code Review (SCR) which removed some upstream refinement costs from customers. We found this was not widely known and was leading some customers not engaging (or re-engaging) with DNOs over cost concerns. We would encourage DNOs to consider how they engage with newer customers to ensure they are aware of the latest industry changes, we believe there is role for the ENA and National Highways to support engagement here.

Flexibility market development

Having DNOs consider more innovative and non-standard solutions to connect EV charging at MSAOs will allow for a faster transition to EVs and reduce the UK's carbon emissions.

6. For example, developing non-firm connection solutions for deployment before a firm connection can be delivered or ramping capacity levels can allow EV chargers to connect earlier than otherwise planned. Moreover, flexibility markets could facilitate increased capacity and allow variable tariffs. Ensuring that all options have been considered and then presented to the connection customer by the DNO will allow the customer to make the best decision for them.

Respondent #15

Our experience with these portals has been mixed. We particularly commend UK Power Networks (UKPN) for their exceptional communication and clear

explanations of their datasets' benefits. However, we've encountered inconsistencies across the different DSOs.

One aspect we found particularly valuable is UKPN's willingness to engage in conversation and consider user input. They have been responsive to our requests for specific datasets, and we're excited about the upcoming additions to their portal.

Moving forward, we believe the inclusion of a "Demand Capacity Register" would significantly benefit the sector. This register would mirror the embedded capacity register but focusing on demand assets, would unlock valuable insights. Sharing this information across DSOs would undoubtedly generate substantial value.

Thank you for considering our feedback. We are confident that your work will lead to improved data accessibility and ultimately, a more efficient energy sector.

Respondent #16

Smarter Grid Solutions (SGS) is a DER Management System (DERMS) software vendor. Our software is widely used by distribution network operators, such as UKPN, in the UK to deliver flexible connections and flexibility service dispatch. SGS was at the forefront of many of the early innovation projects that demonstrated the feasibility of different approaches to managing DER, including for Flexibility Services and Resiliency.

We also provide independent consultancy on a broader range of topics in the power sector in the UK and internationally. Our customers include both network operators and developers / asset owners, in the USA, Canada, Europe, Australia, Japan, in addition to the UK.

To add to the evidence presented in UKPN's DSO Performance Panel Report, we wish to convey the following:

UKPN is recognised internationally as a leader in flexibility and emerging DSO operations.

SGS operates in a number of markets globally. Our experience of those markets, and interaction with stakeholders outside of the UK, is that UKPN is seen as a leader in the use of flexibility. This is twofold: in what utilities in other countries would call their rate case and the use of flexibility to deliver benefit to

customers; and how it has embarked on a pathway to DSO operations. This goes beyond the flexible connections work that UKPN has undertaken with SGS over the last decade.

The North American market for demand response is mature, with several GW of different resource types developed over the last decade, and with increasing levels of sophistication on how those resource types are utilised: bringing demand response closer to real-time, better monitoring, adding electric vehicles and battery energy storage, fleets of Commercial and Industrial assets, and now dovetailing with FERC 2222 rules.

However, this does not map onto the wider range of coordinated DSO operations that UKPN envisages and is making progress towards. In the US, wholesale market conflicts are avoided through “dual participation” rules. Whilst FERC Order 2222 mandates access to wholesale markets for smaller DER, US utilities currently do not attempt to address the challenge of optimising a value stack with conflict resolution. UK DSOs are currently facing building out solutions to this challenge.

In some ways these can be seen as different paths to similar end points, Hence, utilities and other stakeholders we speak to in North America, and beyond, are looking at the UK (and UKPN in particular) as a bellwether with respect to the delivery of DSO benefits. They are also looking at UKPN as a benchmark for the processes and practices that will underpin their own future DSO operations.

The provision of increasing rich data sets by UKPN is aiding their customers and the wider energy sector.

Our own experience of this is via our consultancy business, whose power system analysis services are used by developers exploring connection and development opportunities. That part of our business has already been able to use UKPN’s data sets to better serve our customers. We note that UKPN has engaged with us and other stakeholders to drive improvements in those data sets. Our teams use the UKPN’s Open Data Portal to access that data.

UKPN is developing what are arguably the first open CIM models that allowed third parties to easily run converging load flows.

We would echo the comments of other stakeholders in UKPN's DSO Performance Panel report: we have also seen a change in the quality and scope of data provided by UKPN since the launch of the DSO.

UKPN's development of automated optimisation and dispatch of flexible services through innovative methods are internationally groundbreaking.

UKPN developed innovations in optimisation and dispatch in previous innovations projects such as Optimise Prime, a project SGS contributed to. That project developed both dispatch and automatic optimisation mechanisms for supporting for a firm forward and day-ahead products. We see UKPN continuing to make material progress towards a day-ahead market as a DSO based on the use of flexibility services.

We believe the approach UKPN and the ESO has taken to MW Dispatch allows operational flexibility on the DSO side, to deal with current and future operational issues.

In ED2 year 1, we have seen UKPN's future-proofing approach in action, developing a centralised platform for dispatch for distribution connected participants in transmission and distribution services. We believe this has been driven by a desire to provide flexible services providers with a consistent experience.

UKPN, through the Open Networks with ENA, is playing a leading role in standardisation of dispatch methods across DSOs. We note that the standardisation of DER control and dispatch standards and protocols have moved over the reporting period, with OpenADR3 being released towards the end of this reporting period. Although the proposed method by the ENA to standardise the dispatch method has course corrected in light of that advance, UKPN is also working closely with SGS and the wider DSO and flex service community to map the new version to the standard to UK DSO operations.

SGS is actively involved and supportive of this approach. Whilst this may take longer than the originally envisaged standardised "lightweight" API as a starting point, we agree that it is a sensible approach for the UK.

Respondent #17

SMS are amongst other functions, a sizeable Operator owning Renewable Energy company in the UK BESS market, and as such we have lots of interactions across the DNO / DSO companies across within the UK going back many years.

We are writing this letter in response to your Call for Stakeholder Evidence for OFGEM's DSO performance panel deliberations 2023/24.

Within our letter we are supporting UKPN DSO.

We are strongly of the opinion that UKPN through their DSO activities over the recent years stand out as a shining beacon amongst the rest of the DSO operators. Like most of the DSO's they set out their goals and explained the benefits that were envisaged, but in our opinion they have differentiated themselves in the manner they are striving to deliver those plans.

They have been having effective and timely customer engagement across the wider DSO settings but have been particularly strong within the DER / Renewable Connections areas and Flexibility markets, always striving to be at the forefront of matters effecting their customers / networks.

From a customer's perspective they appear to have almost single handedly brought the rest of the DSO organisations to the table alongside ESO, OFGEM and the ENA to drive forward the issues around the delays to Renewable Energy connections and whilst many claim to have joined the Band Wagon it is still UKPN who are driving matters forward. Holding 2 weekly updates with the interested parties whilst others make excuses and just wait for ESO rather than truly updating their customers. As such we should be connecting a number of our sites much earlier than if we had to wait for the ESO reinforcement works.

Within the Flexibility markets they are actively moving forward with clear plans and interacting with the prospective parties to arrive at offerings that work. We like many others are taking part in their offerings.

They are also really having a positive effect for us within the system outage area whereby applying true flexibility and customer engagement they have been able to soften considerably the effects of system outages on our sites which also allows us to support the networks when required.

Respondent #18

Electralink is owned jointly by the UK's DNOs and we are regularly involved in work that supports the development of flexibility including the operation of the Flexible Power platform for a group of DNOs led by NGED. We have also worked on research supporting ENWL's work in this area.

ElectraLink contributed to the work of ENWL and NPG via their partner WSP to discuss and explore the varying degrees of uptake in regional flexibility. The discussion was based on our experience of the barriers and opportunities for regional flexibility as well as the technical and commercial considerations for GB DNOs.

As Ofgem views Flexibility as a key strategic priority, it is useful to have the opportunity to participate in research designed to further understand, demystify, and improve opportunities for all market participants in this space.

Respondent #19

Please find brief feedback on Essex County Council's experience of working with UKPN as part of your Call for Evidence on DSO Performance.

Whilst we are not in a position to comment on aspect 3-5, we have only positive things to say about our joint working with UKPN on net zero planning through their Local Net Zero team.

1. Delivery of DSO benefits

Level of Ambition

Score: Excellent

Commentary: UKPN, via their Net Zero Team, have been extremely proactive in their communication and contextualization with us as a Local Authority around the delivery of DSO benefits, clearly demonstrating high level of ambition in terms of their own operation as well as a growing understanding of the role Local Authorities can play in achieving net zero. They have been extremely proactive in facilitating and enabling discussions with Essex CC and other authorities in planning for net zero and creative in exploring products and solutions to enable LA engagement.

Benefits realisation

Score: Good

Commentary: UKPN articulate clearly and precisely the benefits realised from this approach, and are proactive in communicating relevant KPIs.

2. Data and information benefits

Scope, granularity and accuracy of data

Score: Excellent

Commentary: The DSO is a market leader in the provision of relevant data sets, enabling a comprehensive and interactive tool via Your Local Net Zero hub, encouraging access, use and the appending of the tool with relevant localised data

Accessibility of data

Score: Excellent

Commentary: As above

Respondent #20

I am writing to share my stakeholder input for the call for evidence, based on my observations of Electricity North West's (ENWL) performance during 2023/24.

With regards to assessment criteria of DSO benefits and scoring criteria 'Level of ambition' and 'Scope, granularity and accuracy of data', my observations are as follows:

- **Appraisal methods are in-line with best practice.** ENWL has used established methods of economic appraisal to quantify benefits values. It has used the industry-wide social value framework and associated common proxies to value relevant activities, meaning that its work is consistent with the common rulebook and in-line with the government guidance in HMT's Green Book. This builds a stronger foundation for comparability of data.
- **Use and sharing of third-party data.** ENWL has used partner data wherever possible to adjust the reach of its benefits values, to ensure modelled values match those attained in practice. It has presented this information transparently, allowing results to be audited. Where partner data is not available, ENWL has relied on other trusted third-party sources, such as government data, to estimate benefits, while making appropriate adjustments to ensure benefits are not overstated. This means we can be confident that ENWL's modelled benefits are conservative and reflective of those attainable in practice.
- **Consideration of benefits and how ENWL's actions shape them.** For all benefits, ENWL has carefully considered how its actions contribute to their delivery. It has adjusted the attribution of benefits where ENWL only partly contributes to the accrual of benefits, to ensure its quantification is conservative. Therefore, we can be confident ENWL has only claimed benefits that are directly attributable to its actions.
- **Review of estimates against outturn data.** ENWL has a robust process to 'stress-test' the benefits it claims. We have observed a five-year track record of ENWL undertaking benefits assessment, and regularly reviewing how these benefits estimated compare to the outturn benefits realised. We have seen evidence that this strong foundation is now being applied to DSO benefits tracking. This will allow ENWL to adjust its modelling over time to better account for historical performance and reduce the variance between modelled and outturn benefits. In addition, ENWL instructs an independent QA on all modelled benefits to ensure all modelling decisions are realistic, data-driven and conservative. Therefore, the modelling in ENWL's submission 2023/24 has built on the lessons learnt from older modelling to maximise the reliability in this submission.

I have no hesitation in saying that ENWL has at minimum achieved the baseline standard of average performance for delivery of DSO benefits (score of 6), with a strong submission. Thank you for giving stakeholders like me the opportunity to submit feedback directly to you and for considering my comments in the round with other evidence presented.

Respondent #21

I wanted to provide some stakeholder feedback on UKPN's DSO performance as follows:

- In 2023, UKPN published an [operational agreement](#) which sets out the roles and responsibilities of the DNO and the DSO at a detailed level
- We believe that this document sets out industry best practice and is an important resource to clarify the emerging roles of DNO and DSO
- We are particularly pleased with the transparency that UKPN have shown in publishing a document that provides clarity and detail for how DNO and DSO interact with one other
- We have been also impressed with the response to our feedback on this document that UKPN provided, the speed of this feedback and the willingness to engage with our peers in the industry on this topic which will help to shape future thinking and has also resulted in interest from other DNO operators

Respondent #22

I am writing to input into the call for evidence on the DSO Performance Panel, informed by the Greater Manchester Combined Authority's experience of working with the Panel and ENWL more generally over the 2023/24 regulatory year, and includes published information in their DFES, DSO Performance Panel Submission, and relevant Stakeholder events held across their operating area.

Our Director of Places chairs the ENWL DSO panel, and our Energy Policy and Programmes Lead chairs, in an independent capacity, the ENWL Sustainability Stakeholder Advisory Panel, and both sit on the ENWL Independent Oversight Group to represent these sub-groups.

We feel it is necessary to point out that this is an area of high complexity, which most ENWL stakeholders have limited understanding of, and in those that do, this is often limited to those facets which are relevant to their work. As such, these views are likely to be skewed through this lens and the specific progress perceived by their individual interaction and organisational objectives.

In terms of the specific questions asked, we would like to note:

Delivery of DSO Benefits

Level of Ambition – Good (score 7-8)

- Clear alignment with customer and stakeholder engagement discussions.
- System benefits identified within the strategic framework.
- DSO Panel membership reflects a wide range of local stakeholders.
- The use of stakeholder personas reinforces understanding of different customers and stakeholders' needs and expectations.

Benefits realisation – Good (score 7-8)

- Although ENWL is still at an early stage of the RIIO-ED2 price control, the benefits delivered have been clearly articulated and there is clear evidence of quick and proactive adaption to emerging information e.g. looking at the lower level of adoption of LCTs than was originally envisaged avoiding investment ahead of need and collaborating with SSEN on standardising how DSO benefits are counted.
- £9m in benefits has been realised by delivering 86% of the initiatives identified in year one, with a further £200m enabled.

Data and Information benefits

Scope granularity and accuracy of data – Good (score 7-8)

- Expansion of LV monitoring network to 47% of customers.
- Clear limits between strategic framework and individual deliverables.
- Scope of data increased to reflect needs of the ESO.
- Established APIs on the Open Data Soft platform that are standardised across multiple DNOs to facilitate machine readable format for big data access.

Accessibility of data – Good (score 7-8)

- Work undertaken on simplifying customer journey and codesign of tools to aid access and understanding.
- Machine readable data and leading the area of Grid code planning data exchange in CIM format.
- Use of the Data Portal which meets the Energy Data Taskforce recommendations and Data Best Practice Guidance.
- Extensive consultation with stakeholders and the creation of video support tools, webinars, hackathons and user stories.
- Clear evidence of customer satisfaction on user of open data tools at 85%,
- Facilitation of secondary training platform.

Flexibility market development

Design of distribution flexibility products, contracts and processes - Good (score 7-8)

- 11 of 13 deliverables are on track, initiatives 5 and 6 have been delayed due to lack of need.

- The RetroMeter, funded by SIF, a Metered Energy Savings demonstrator project is testing baselining methods and verifying savings in a live retrofit scheme in Manchester, focusing on heating energy efficiency.
- Identified lower ceiling price due to higher network reinforcement costs in rural areas, impeding progress in northern areas.

Facilitation of market access- Good (score 7-8)

- End to end flexible service platform introduced.
- Workshops with Local Authorities as suppliers of flex.
- Clear response to stakeholder asks on market access.

Options Assessment and Conflicts of interest mitigation

Assessment of network options – Good (score 7-8)

- Decision making tool embedded in ANM solution with a published method of assessment.
- Clear use of options assessment in DNOA method and process.
- DNOA published in response to stakeholder feedback. The published report provides granular data at the grid supply point level.
- DSO Panel evolving after first year to broaden representation and so its ability to represent stakeholders and hold ENWL to account.

Management of conflicts of interest – Good (score 7-8)

- Original DSO Panel identified in RIIO-ED1, with ToR signed off by the Customer Engagement Group following wider stakeholder engagement and feedback.
- Co-designed the Standstill decision period.
- CBA tool shared with stakeholders.

Distributed energy resources dispatch decision making

DER visibility and dispatch– Average (Score 5-6)

- 3 initiatives harder to deliver than was foreseen in the RIIO-ED2 transition plan, with mitigation measures and strategies being deployed.
- While there has been clear expanded engagement with national actors the data exchange of curtailment information via ICCP to other system network licensees is still in development but not complete.

- Extended the scope of stakeholder engagement on BiTraDER in response to stakeholder input on the need for stackable secondary markets.
- Dedicated Theme 2: Standardising DER and Network Data should when complete meet the requirements of “Good”
- Curtailment index published and communicated to relevant customers, with a last in first out method.
- Creation of an Operational Decision Making Framework to address stakeholders desired to have single decision making document.

In addition to the above we would like to note that throughout our engagement with ENWL, and as can be seen in their DSO Performance Panel Submission, ENWL has extensively engaged and listened to a broad spectrum of stakeholders and as a result of this insight adapted their approach to the DSO transition. We believe this has increased stakeholders and customers confidence in ENWL and strengthened their legitimacy and “licence to operate” which are critical for regulated monopolies.

We note that such engagement and feedback, outside of the Data Access parameter is not well reflected in the evaluation method for DSO Panel performance and we would urge Ofgem to consider how a future iteration of the evaluation method could capture this to provide a more rounded assessment of progress and Ofgem’s stated objective that the network should not be a barrier to the transition to net zero.

Thank you for giving stakeholders like me the opportunity to submit feedback directly to you and for considering my comments in the round with other evidence presented.

Respondent #23

Introduction

This submission is from UK100, a network of local authorities and their leaders who have pledged to lead a rapid transition to Net Zero in their communities ahead of the Government’s legal target. We represent 112 councils from across the country, representing all political parties and both urban/rural environments. Local authorities are pivotal in achieving Net Zero, but face significant barriers to achieving Net Zero goals. 82%¹ of all UK emissions are within the scope of influence of Local Authorities however, they have no statutory duties on energy, meaning their involvement in energy system planning is piecemeal. DSOs can play a role in supporting local authorities on this journey.

Recommendations

Our submission focuses on the following key areas that impact local authority's

role in decarbonising the grid and where DSOs can work in partnership to support this –

1. Support for Local Area Energy Plans: Analysis shows Local Area Energy Plans (LAEP) could reduce costs by over two-thirds while almost doubling bill savings compared to one-size-fits-all national plans. Wales is the first government to fund the rollout of LAEPs for all their local authorities. A national framework for LAEPs should be put in place backed by the necessary resources and funding in all parts of the UK as well.
 - i) DSOs need to work with local authorities and support them with their energy planning which will in turn allow them to undertake a systems approach to regional planning. For instance, UK Power Networks (UKPN) is working to support their local government customers with tools and guides for their energy planning. They have jointly developed a stakeholder-endorsed LAEP framework. This is a good start and more work will need to be done to support and guide local governments to improve and action their plans.
2. Limited capacity at a local level: For local authorities, the main barriers relate to capacity, resources and skills to understand energy systems and energy markets and be able to develop schemes.
 - i) UK Power Networks has developed a free online energy planning platform, *Your Local Net Zero Hub* and the Local Area Energy Planning Open Data page which can be useful for local authorities. They can receive training on using the platform and further guidance on their local plans. This can be further improved with feedback from users and is a welcome step that can be replicated.
3. Tools and guidance for local authorities: Local authorities struggle with the right set of tools and frameworks, often developing them from scratch which is an inefficient process. Access to easy-to-use tools that can help them plan better and interpret data more effectively can improve their decision making.
 - i) Local authorities often do not have the necessary capacity to develop holistic plans or create complex models. Councils need to be able to access datasets and tools that can help local authorities in their energy planning and LAEP development. Easy-to-use tools created by DSOs can help them make sense of their own datasets and use them more effectively.
4. Connecting to the Grid: The UK has the longest queue to connect to the electricity grid of any country in Europe. Wind farms, solar arrays, and

battery projects are stuck in gridlock for up to 15 years. A key aspect is forecasting and working with local authorities to understand their future needs and incorporating it within the DSOs plans. The DSO should work with the local authorities in their region and review their plans against their own forecasts. This kind of joined-up working will support better regional planning and decision making. Adding in flexibility also reduces the pressure on infrastructure development and should be promoted further.

5. Regular evaluation and iteration: Many of the tools and supporting systems are new and developing. Thus, to understand impact as well as ensure these are useful for the end users it is important to constantly evaluate as well as make the necessary changes. This practice should be embedded in the DSO's processes. Best practice should also be shared among DSOs so they can learn from each other and improve their offerings.

Local authorities need more support to be able to plan and develop their local energy systems better. DSOs have an important role to play and within the last year some steps have been taken in the right direction to support local authorities. DSOs should be providing dedicated support to councils as a crucial partner in the transition.

Respondent #24

Thank you for the opportunity to feed into the DSO Performance Panel assessment. Gathering stakeholder input is crucial to assess and incentivise DSO performance effectively, given the importance of DSOs in enabling the secure and low cost uptake of low carbon technologies required for Net Zero. The role of the Panel is particularly important in RIIO-ED2 given the failure to develop objective, quantitative metrics on DSO performance for use in this price control.

Octopus Energy is the largest electricity supplier in Britain and a leading market participant in low carbon flexibility markets. We have bid into flexibility tenders with every DSO and have c.1GW of consumer flexibility available to dispatch in these markets, which we expect to grow exponentially in the coming years. We are also a leading developer and investor in renewable energy projects, many of which are connecting at the distribution level. This means we recognize the importance of DSOs and have a first hand view of how they are performing in the current system.

Overall, there is a wide range in quality of DSO functions delivered in the market today. In the below submission we first outline key areas where the DSO sector overall should be improving performance to better deliver for customers (section 1). Broadly, we see a need for faster progress in several areas that will lay the foundations for DSOs to operate as efficiently as possible in a Net Zero power system, particularly improved network visibility, data transparency and future-proofing of flexibility markets.

We are also closely engaged with several DSOs in innovation, trial or market development activities. We outline specific successes and best practice that the Performance Panel should consider in section 2.

Key focus areas for DSOs to deliver for customers

Several ongoing challenges across the sector are holding back the potential of DSOs to help deliver a Net Zero transition at lowest cost for customers. We recommend the DSO Performance Panel focus attention on these issues in their assessment of DSO evidence submissions. Whilst these are overall sector-wide challenges, we note that some DSOs are driving progress towards solutions. We highlight examples of this from our own experience in Section 2 below.

In our view, key focus areas should include:

Enhancing network monitoring and visibility

DSOs overall still lack granular and comprehensive network monitoring capabilities, particularly at the lower voltage levels. This is driving uncertainty on the level of headroom available, where/when reinforcement is required, and how much flexibility can contribute to managing network constraints. This uncertainty is reflected in DESNZ estimates on distribution network investment required to deliver Net Zero, which varies by £10-20bn (PV, 2020) by 2050 depending on assumptions on available capacity¹. Comprehensive hardware upgrades will be expensive, but some DSOs, particularly UKPN, have leveraged machine learning and other data sources (e.g. smart meters) to begin overcoming this challenge by building accurate LV capacity models. Other innovators, including Octopus,

¹

<https://assets.publishing.service.gov.uk/media/62eb91398fa8f50335b35e09/electricity-networks-strategic-framework-appendix-1-electricity-networks-modelling.pdf>

are providing network intelligence capabilities that DSOs should leverage to provide value for customers.

As recognized by Ofgem, data accuracy, network monitoring and intelligent network options analysis are core functions of DSOs. LV monitoring is a crucial enabler of all of these capabilities and recommendations from the DSO Performance Panel must drive progress in this area as a priority.

Improving use of flexible connections

DSOs have begun to use Active Network Management (ANM) technology to bring forward connection of new generation projects where there are ongoing transmission constraints. Flexible connections mean projects can connect sooner but with curtailable output if there are upstream network constraints. However, to date practice has been inconsistent and DSO approaches have undermined the viability of generation projects in some cases. This is holding back the potential value of ANM for unlocking faster grid connections for renewable projects. Key ongoing issues include lack of transparency over assumptions driving curtailment assessments, slow or inconsistent communication between DSOs and ESO, and/or imposition of excessive curtailment requirements that make generation projects uninvestable. DSO functions have a role to play in enabling flexible connections through smart use of ANM and data transparency, meaning the Performance Panel must scrutinise efforts in this area as part of their assessment.

Despite initial teething problems, some DSOs have rapidly improved practice in this area. NGED, for example, initially issued connection offers with excessively high curtailment percentages, but have now transitioned to a model of providing transparent curtailment assumptions for developers to review and refine collaboratively. Best practice across DSOs should build on this, including making curtailment models and assumptions open source for developers to self-serve prior to connection application. Improved transparency here would unlock new ways of sharing risk between developers and DNOs and help bring more connection dates forward to keep us on track for Net Zero. Whilst DNOs may be cautious of outsourcing more of the analysis required for new connections, with appropriate controls in place (e.g. accreditations for third party network modellers) this approach could accelerate connections and make best use of scarce network modelling capabilities. Networks in the US are already pursuing this approach and the US market is developing innovative ways of automating the network study process.

Over the longer term, we also expect all actions to resolve network constraints to be market-led, helping to manage the network at lowest cost to customers.

Whilst ANM has a role to play in accelerating connections today, DSOs should not be using ANM to provide capacity where other flexibility providers can deliver this at lower cost. DSO actions to develop flexibility markets will be crucial to achieve this outcome, discussed in more detail below.

Developing and scaling flexibility markets

Despite efforts at the Open Networks forum, there remains inconsistency, fragmentation and excessive complexity in DSO flexibility procurement across GB. Whilst ownership of flexibility market development will change soon once a market facilitator decision is taken by Ofgem, the Open Networks forum must continue making progress as Ofgem delivers a quick transition to the new responsible party. Key ongoing issues DSOs should be addressing are:

- Complex market access processes and rules meaning that flexibility providers face high costs in registering to participate in multiple tenders;
- Inconsistent approaches to technical specification of flexibility products across baselining, contract terms and APIs. This provides another barrier to entry to flexibility provision, reducing liquidity in tenders and leading to higher costs for customers overall;
- Contradictory price signals between ESO network services, wholesale market, balancing mechanism and DSO flexibility services. Better use of implicit flexibility (e.g. dynamic price signals being built into network charges rather than through explicit auctions) should help resolve this contradiction. Current stacking rules will also need to be reconsidered and made less restrictive.
- Provision of necessary data for flexibility providers to build business cases varies across DSOs. Efforts to move towards more real time network constraint monitoring/forecasting would help providers prove the benefits of their services and justify investment to expand capacity

Some DSOs are driving forward efforts to overcome these challenges and find ways to maximise the use of flexibility to minimise costs to customers. We provide specific case studies on this in section 2.

Driving towards data transparency and standardisation

Data transparency, accuracy and granularity is a core function of DSOs, with network data providing an important resource for innovators across the system,

as outlined by the Energy Digitalisation Taskforce². Weaknesses in DSO performance on this issue cuts across all of the above challenges. All DSOs are now publishing some network data, but there is wide variation in quality and accessibility of this information. This issue was demonstrated by recent challenges Ofgem faced in defining quantitative metrics to measure DSO performance.

In their assessment, the Performance Panel should consider the volume/coverage of data disclosed by the DSOs. However, equally important is the extent to which data is provided in its raw form (not manipulated), made machine readable (e.g. readily accessible via API), supported by high quality documentation/metadata, quality assured and updated on a regular basis.

In particular, DSO efforts to define clear, objective metrics by which to assess performance should be rewarded by the panel. UKPN efforts to use Treasury Green Book standards to quantify benefits of DSO activities are a good example of this. Accurate comparison of DSO activity and relative performance across DSOs is currently very difficult for stakeholders, with extensive DSO strategy reports using different formats, methodologies and data points to present progress. Addressing this would help to drive DSO best practice with a stronger reputational incentive.

Strengthening governance

DSOs have significant potential to provide system value as a market facilitator and enabler of innovation across the electricity networks. However, delivering this in practice is likely to require clear separation of duties between DNO and DSO, as well as clear routes for engagement and external scrutiny from stakeholders. Current 'DSO panels' often detailed operational engagement with the DSO businesses, lack broad industry representation, and lack teeth to influence decision making within the DSO. Better practice will be needed across the sector to create strong, independent DSO governance in the best interests of customers and broader system users.

Emerging areas of DSO best practice

² <https://esc-production-2021.s3.eu-west-2.amazonaws.com/2022/01/ESC-Energy-Digitalisation-Taskforce-Report-2021-web.pdf>

As part of our ongoing industry collaboration and engagement we have worked with several DSOs who have demonstrated leadership or best practice. The below presents evidence of these case studies for the DSO Performance Panel to consider in their assessment:

Dynamic DUoS trials - UKPN and SSEN

UKPN (through [Project Shift 2.0](#)) and SSEN are proactively exploring potential future market designs to streamline flexibility incentives and ensure alignment with the other price signals available to flexible assets. We are working closely with both networks to test the feasibility of introducing dynamic distribution charging and build the evidence case on whether this is an economic and effective way for DSOs to manage evolving constraints in the future. This proves forward-thinking and innovative mindsets from these DSOs who are willing to explore alternative constraint management tools that may be more resilient in the long term. We suggest that this is considered as evidence of good performance under the 'assessment of network options' criteria for the options assessment and conflicts of interest mitigation criteria.

Connections data transparency – NGED

NGED has been highly engaged and collaborative in improving the connections data available to renewable project developers. This has included detailed workshops with developers to understand key decision points on the project lifecycle and the specific data needed to help decision makers. NGED has since published data on GSP headroom, GSP connection queues and the 'LIFO' (last in first out) stack for ANM curtailment. This is already helping us to site projects in a more efficient way and make best use of limited network capacity.

This approach is demonstrative of NGED's collaborative approach to stakeholder engagement. More broadly, Octopus and other industry stakeholders have fed into the DSO strategy and NGED has run multiple events to gather industry feedback and refine their plans.

Innovating in consumer flexibility - UKPN and NGED

We have worked with both UKPN and NGED on innovative projects that explore routes to maximising system benefits from consumer flexibility:

- **Power-Ups:** UKPN have worked with Octopus to offer free electricity to customers where renewable generation would otherwise be curtailed (demand turn-up). 24,000 customers have benefited from this service and UKPN has worked to engage other DSOs and further expand the benefits. For example, following on from UKPN, NGED is also exploring demand turn-up potential for 2025
- **Equinox:** NGED has worked with Octopus and other partners to explore the potential for heat pumps to operate flexibly and mitigate network constraints. Structured as an NIC project, Equinox offered 3 commercial propositions to customers to test uptake and gather feedback. >1000 customers signed up for the Winter 23/24 trial, providing 9MWh of measurable turndown over 22 price signal events.

In both cases, these trials have showcased the value of DSO collaboration with energy suppliers and flexibility providers to reduce the costs of Net Zero for customers.

Leading flexibility market development - UKPN and NGED

Both UKPN and NGED are driving forward solutions to some of the key ongoing challenges in the local flexibility markets, efforts that should be recognized by the Performance Panel.

UKPN has recently procured and implemented the EPEX SPOT platform for bidders to access its flexibility tenders. This should help to standardise and streamline market access and prepare UKPN for further scale in the volumes procured through its tenders. Similarly, NGED has integrated its market gateway with Piclo, a leading flex market platform provider, improving interoperability and making access easier for flexibility providers.

UKPN is also working on alignment with ESO to overcome some of the coordination challenges between flexibility requirements at transmission and distribution levels. This has included development of a day ahead flexibility product that can align with ESO requirements, as well as enhanced data sharing to give ESO visibility on asset operation.

Strong DSO governance- UKPN

UKPN have led the DSOs in establishing a legally separate DSO entity with an independent DSO board in place to review investment decisions. Greater functional and legal separation of DSO activities improves confidence in flexibility markets, where participants are still concerned about conflicts of interest and use of DNO capabilities in these markets (e.g. DNO provision of CLASS to ESO as a balancing service³).

UKPN has also gone further than other DSOs in giving its DSO board stronger powers to scrutinise and challenge investment decisions. We agree that this additional oversight will help push UKPN to make more efficient network investments and maximise the benefits of flexibility to consumers.