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**29/09/2017**

Dear Farina,

**ElectraLink's response to the ENA Open Networks Project consultation 'Commercial Principles for Contracted Flexibility: Promoting Access to Markets for Distributed Energy Resources'**

ElectraLink welcomes the opportunity to respond to Open Networks Project consultation. ElectraLink supports the creation of DSOs and welcomes any opportunity to support DNOs in their transition towards a DSO operating model. Our response to the consultation questions are in Appendix 1 and we are happy for you to make this response public.

ElectraLink is responding in its capacity as the organisation that discharges the DNO Standard License Condition 37 (Provision of the Data Transfer Service) on behalf of the DNOs.

ElectraLink was established in 1998 to provide an independent, secure and low cost data transfer service between UK electricity market participants: The Data Transfer Service (DTS). The DTS transfers data relating to business-critical energy market processes, including customer switching, settlement, agent management and meter administration.

As a wholly owned subsidiary of the DNOs, ElectraLink has an obligation to competitively procure the technology and service components of the DTS. ElectraLink provides the DTS under a multi-party agreement, the DTS Agreement (DTSA), governed by a user group with oversight from Ofgem – details of the members of the user group can be found here. The number of users of the DTS and data transferred by the service has increased rapidly over the last 5 years largely driven by new market actors, such as a new entrant suppliers and aggregators. Currently, there are 242 energy market participants connected to the DTS across many areas of the energy market:

| Participant type | Number of DTN connections |
|---|---|
| Distribution | 14 |
| Metering | 33 |
| Other | 34 |
| Tier 1 (Big6) | 6 |
| Tier 2 supply | 12 |
| Tier 3 supply | 123 |
| x-Green Deal | 19 |
| Generation | 1 |

The full cost of setup and operation of the DTS is recovered by ElectraLink from the users of the service on a cost-recovery basis regulated by the Charging Principles in the DTSA. ElectraLink also receives a return on its investment governed by Ofgem. DTS Users are charged a connection fee, data-usage charges and supplier-specific charges. Over the regulatory cycle (5 years), the total costs recovered from DTS Users equates to the cost of providing the service. Annual short-term surpluses and shortfalls may arise as ElectraLink seeks to avoid volatility in DTS charges to users. The average cost for users in 2016 was circa £25k per annum. We foresee the user cost of the DTS reducing as the UK energy industry utilises the DTS to support a greater number of market processes.

In a fast-changing UK energy market, Electralink has already worked with its service providers to evolve the DTS into a scalable service, easy to connect to, supporting multiple file and communication types (including XML) and which operates in near real time. The technology that supports the DTS is currently in the process of being re-procured to enable the DTS to better support emerging industry processes and models. The re-procured DTS will be designed to support multiple areas of industry change including CSS, HH settlement, and DNO to DSO transition. New technology will be considered including web-service access to industry data, and, potentially, blockchain. Re-procurement of the DTS will complete in 2018 with service implementation/transfer completed by 2020. ElectraLink's involvement in the early stages of the requirements gathering for the DSO transition will ensure that existing DNO assets are utilised to support the DSO transition to minimise cost and impact of this change on operational performance.

In addition to providing the regulated DTS, ElectraLink has developed a range of commercial services to support the transformation of the UK energy market and deliver ElectraLink's vision and mission to be the bridge that underpins the transformation of utility markets growing through trust, choice and transparency.

These commercial services include:

**Network Services:** Network services leverage the data transfer service to provide a range of commercial services to support the operation of the energy industry. These include the transfer of RGMA gas flows, the provision of electronic DUoS billing solutions and additional tools to facilitate systems migration and information sharing. These tools are our File Cloner services (duplicating flows between different servers/actors) and our file conversion services (converts files into the formats users wish to send or receive them in). ElectraLink also offers enhanced validation tools that can reduce errors when sending and receiving DTC flows. These services are taken up by over 60 market participants and provide value through cost reduction and the streamlining of processes.

**Energy Market Insight:** ElectraLink has created, under the governance of the DTSA, a capability to analyse the data transferred across the DTS. This analysis supports industry process assurance, market monitoring and industry change through the extraction and analysis of data transferred across the DTS. Examples of these services include embedded generation dataset and switching and smart metering installation tracking. The DTS Users directed ElectraLink to develop data analysis services to improve the efficiency of the market at its own commercial risk but ElectraLink has the option to request these services via the User Group with the relevant costs being recovered through DTS charges.

ElectraLink expects the data transfer requirements in the UK retail electricity market to change with the migration from the DNO to DSO. During this period of change the DNOs will continue to have their licence responsibility to provide a data transfer service. ElectraLink's interest in this consultation is to offer its support to the DNOs as they transition to the role of DSO in order to better understand the data transfer requirements which will need to be incorporated into the DTS. ElectraLink currently discharges successfully the DNOs' responsibilities for data transfer under SLC 37. It is important that the delivery of SLC 37 is not compromised through the DSO transition and therefore a key theme of our response is the requirement to maintain transparency and coordination through inter-industry data sharing.

Thank for you for this opportunity to respond to your consultation. Should you require any additional information or if you have any questions, please contact Dan Hopkinson (Dan.Hopkinson@ElectraLink.co.uk) in the first instance.

Kind Regards

**Stuart Lacey**

Chief Executive

ElectraLink

**Appendix 1: ElectraLink's response to the Open Network's consultation**

**Q1: What are your views on the models outlined in Appendix 1, and how they rate against the Assessment Criteria?**

Please find our assessment of each model against the assessment criteria (below).

1. Promotes competition in the provision of services to DSO, NETSO, suppliers
2. Allows procurement from DER by multiple parties
3. Extent to which procurements of services by the NETSO is not done in a detrimental way to distribution networks
4. Maximise opportunity for synergies
5. Allows for the management of conflict between service delivery requirements and network capabilities
6. Delivers opportunities for third parties

Model 1:

We believe the assessment made in the paper covers correctly how the status quo rates against the assessment criteria.

Whilst we agree that this model promotes competition between service provisions contracts, due to the exclusivity measures in some contracts, it does not allow them to compete for multiple contracts; therefore, we believe that this model does not promote a wholly competitive market. This model, as the paper states, does not always allow for DER procurement from multiple parties. Without the ability to compete for multiple contracts, DER providers can be restricted around the service provisions they can provide once they are in a contract, distorting competition and not necessarily resulting in the most optimum allocation of resources, as other – less optimum - service providers take 'spare' contracts, potentially increasing overall system costs.

The procurement of services by NETSO does not include engagement with the DSO or references to DSO requirements; therefore, we believe there is no guarantee that these procurement activities will not detrimentally impact on distribution networks or that this model will maximise synergies or allow conflict management between network capabilities. Without informed engagement with the distribution networks, NETSO activities are unlikely to result in positive whole system outcomes as network requirements are not considered.

We believe opportunities for third parties, such as aggregators, are not hindered in this model.

Whilst we agree that once (or if) exclusivity measures are removed this should increase competition and improve the status quo, without engagement and coordination with distribution networks, this model will fail to produce an outcome that benefits the whole system.

Model 2:

Model 2 addresses some of the concerns within existing arrangement by adding a layer of distribution network impact analysis into NETSO procurement and DER considerations. The DSO is also allowed to have their own DER contracts, where able (if there are no exclusivity clauses).

Model 2 addresses the concerns of network operators by ensuring that the decisions made by NETSO do not detrimentally impact on the networks by allowing for an understanding of existing network needs and arrangements and reduce conflict with the NETSO. Real-time impact analysis and at contract award should reduce the conflict between NETSO and DSO; however, whilst this should work in theory, it does not explain how conflicts are resolved and what requirements would take priority, in practice.

There is no guarantee in model 2 that DSO constraints will be considered. Therefore, we believe the framework within which conflicts are resolved would need to be established with the appropriate governance and established principles before we can agree that this mechanism will always maximise synergies between the distribution network and system operation. Whilst the role of principles and governance is essential to the success of this model, as this will determine the rules of engagement, the correct use of operational system integration and cooperation will also be critical to ensuring that actions are visible, transparent and coordinated.

We believe that visibility through data is central to any DER market integration model and, therefore, recommend that data transfer service providers, including ElectraLink, should be included in the development and movement of this model to ensure that the data transfer mechanisms are fit for purpose and do not hinder the cooperation between the DSO and the NETSO. At a minimum, where two actors could call on DER (the DSO and NETSO), pre- and post-event messaging is essential to identify revenue streams. Under SLC 37, it is the DNO's obligation to provide use of system UoS data transfer and it is important that the data transfer mechanism is compliant with this requirement.

Much like model 1, model 2 does not address the competition issues raised above with having exclusivity contracts.

Models 3 and 4:

Models 3 and 4 move beyond merely involving the DSO considerations in any procurement processes the NETSO encounters but the NETSO or DSO playing a central role in procuring DER capacity for the DSO and NETSO.

The following model shows the data on available DER services required to inform the procurement processes. This model references DSO but can equally be applied to the NETSO.

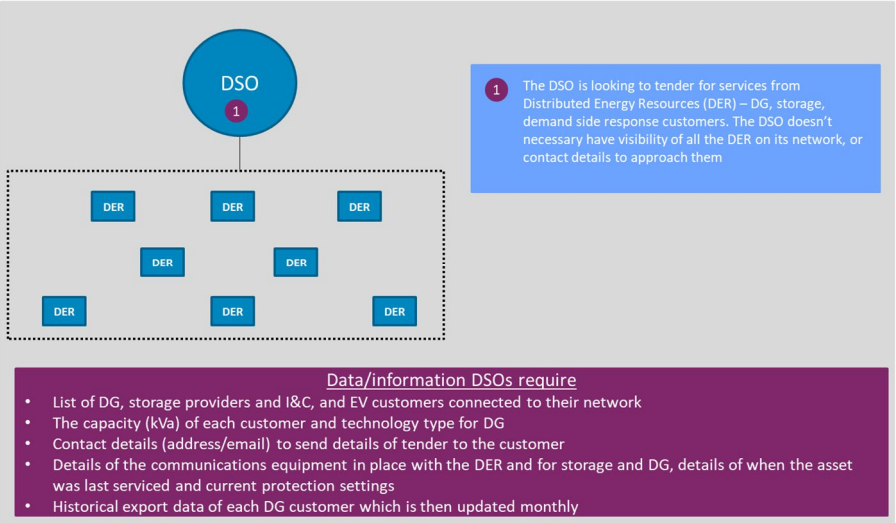



Fig 1: data service required to inform of available DER.

The ENA model ensures that the DSO and NETSO requirements are met and taken into consideration ensuring most synergies are met. ElectraLink agrees that this model addresses the risks of multiple contracts, as the NETSO and DSO are procuring for both parties.

However, much like model 2, this model does not explain how the procuring parties will balance their sometimes-conflicting interests – the governance and framework around avoiding conflict will need to be established before deploying this model.

Model 5:

Model 5 attempts to improve the cooperation between NETSO, the DSO and other market participants (Aggregators) by establishing a central dispatch platform responsible for dispatching DER. Any party can dispatch DER from this platform but when they do so they will be provided with the counterparty's requirements to ensure synergies are realised.

ElectraLink agrees that this model allows for synergies to be realised and ensures that multiple parties can contract DER. This should, in theory, promote a cost-effective mechanism for managing DER.

However, as noted in the paper, this model could be opaque to the DER if they are unaware of why or by whom they are being 'called on' for. Therefore, there is no guarantee that market participants will be able to reconcile actual activity with potential revenues. This may limit investment. This lack of visibility issue should and could be rectified before this model is deployed. The following model provides a view of the data sharing that would mitigate these impacts.

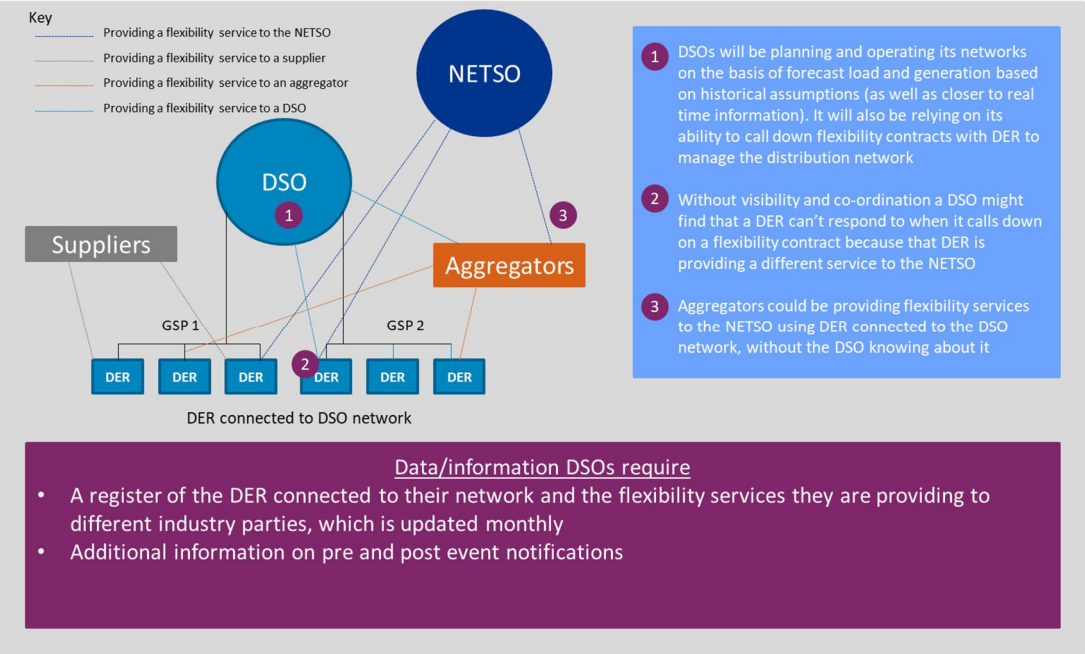



Fig 2: data to support central platform.

Model 6:

Model 6 represents a decentralised approach to DER market integration by allowing all actors in the market (DSO, NETSO and aggregators) to procure DER, but with the information sharing around network conditions to allow for NETSO to make informed decisions when calling on DER.

Much like Models 2-4 this model does not outline how contracts will be managed when they are called off. Understanding the governance and technical arrangements around this model is essential to understanding the impact this model could have on competition (are they sharing insider information?); whether opportunities will be maximised and whether conflict management will be resolve. There is nothing in the outline of this model that ensures these areas are resolved and optimised.

**Q2: To what extent do you think it will be possible/desirable to move between different models over time? Please list barriers to implementation where possible.**

It should be a design principle that the management of both the distribution and transmission systems will need to be an evolution rather than a revolution. Technology change, such as electric vehicle proliferation and home storage, will inevitably drive different requirements on the networks at different times. These requirements will also be different depending on the geographies and the network topographies impacted. On this basis, the models need to be flexible and ready to be deployed in stages if the best whole system outcome is to be delivered. To draw a parallel with the energy retail market, the need to co-ordinate gas and electricity processes was not built into the initial design processes and both markets operated independently. In recent years, this is driving significant investment in central programmes, such as faster more reliable switching, which are required to align processes and to facilitate new retail business models.

Key to delivering flexibility in the operating models is defining a clear set of data requirements, which can be understood and used by all potential parties. Establishing core data requirements will allow different actors to interact with a common language. An aggregator in Scotland may deliver services directly to the NETSO as per model 1 whereas in London that interaction can occur with the DSO. With common defined data, these interactions can be administered by the same systems, reducing cost and complexity. Successful implementation of this approach would require the clear mapping of the mechanisms deployed at a very granular level and would also need a clear roadmap and change control process to ensure clarity for all actors. This model of establishing data principles and change control has been successful in the retail energy market, with the support of ElectraLink. However, the benefits of building change as a core principle would mean that the network operation systems could 'flex' to meet changing demands.

**Q3: What steps should NETSO and DSOs take to remove complexity when providers are providing multiple services to multiple market participants (both at procurement and operational stage)?**

The key element of removing complexity at the procurement and operational stage is clarity. There are several components in providing clarity linked to the response in question 2.

1: Which models are the DSO / NETSO operating in the relevant area of the network.

2: What constraints are applied on the DER action by the DSO in relation to the network area.

3: What are the sensitivity factors (how applicable is the DER service to the specific network) relating to the DER service.

4: What is the existing DER capability on the Network.

5: How will pre-and post-event and real-time signals manifest and what is the process in terms of prioritisation for multiple signals.

Removing complexity is again about the visibility and accuracy of the data pertaining to the required services and the parties able to deliver those services. Definition of this data will be a requirement of the early programme and trails on different commercial models should include data sharing as a key component. ElectraLink would be keen to participate in such trials and to facilitate the use of the existing, low cost Data Transfer Service as a 'no regret' option for transferring data between trial participants.

Moreover, as central provider for the DNOs, ElectraLink can ensure that there is consistency across different DSO areas, even though service providers' interaction within the market will differ, and ElectraLink can ensure that there is standardisation between market participants in data transfer technology and data transfer format – thus ensuring the SLC 37 is protected throughout the transition.

**Q4: What is the role of aggregators and suppliers in helping to remove this complexity?**

The role of aggregators and suppliers in removing complexity is again around the sharing of data to provide the DSO / NETSO with a clear view of the DER services available to the Systems Operators. From the aggregators perspective, this clarity on the portfolios being held and the DER services contracted or available to contract. Visibility of this could be held centrally and transferred in a way that prevents commercially sensitive information being exposed to no authorised parties.

Suppliers can provide similar clarity in relation to the proliferation of TOU tariff take up by customers. This data can be aggregated to prevent individual data from being shared without consent but it would allow the DSO to forecast the impact of TOU tariffs as the technologies connected on the networks changes over time. The flow of data is illustrated in the model below.

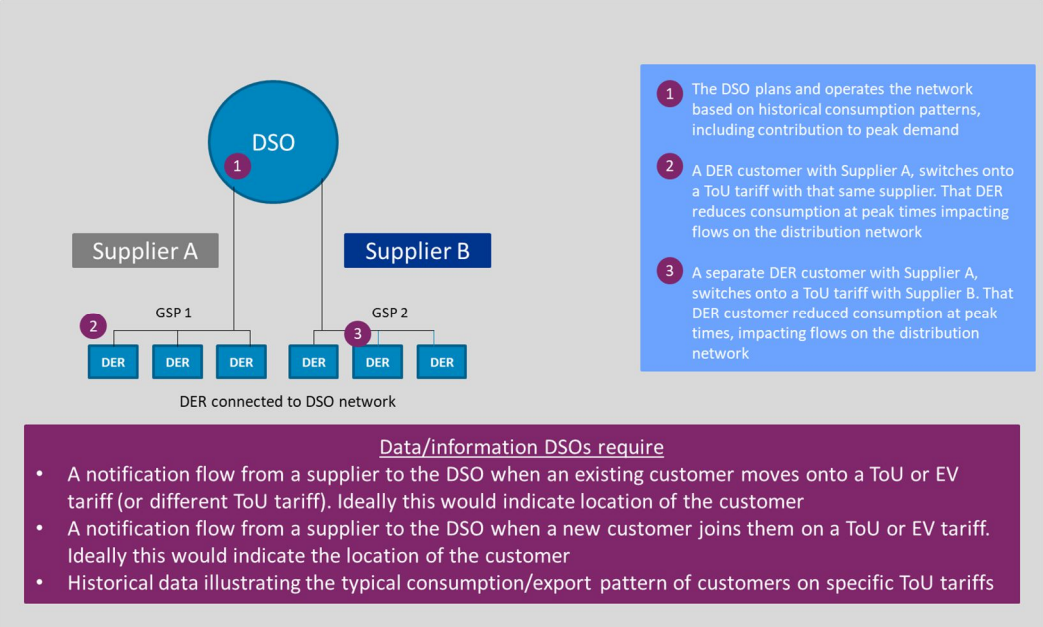



Fig 3; ToU tariff data

**Q5: What are the implications for your business of the need for visibility and controllability of DER output?**

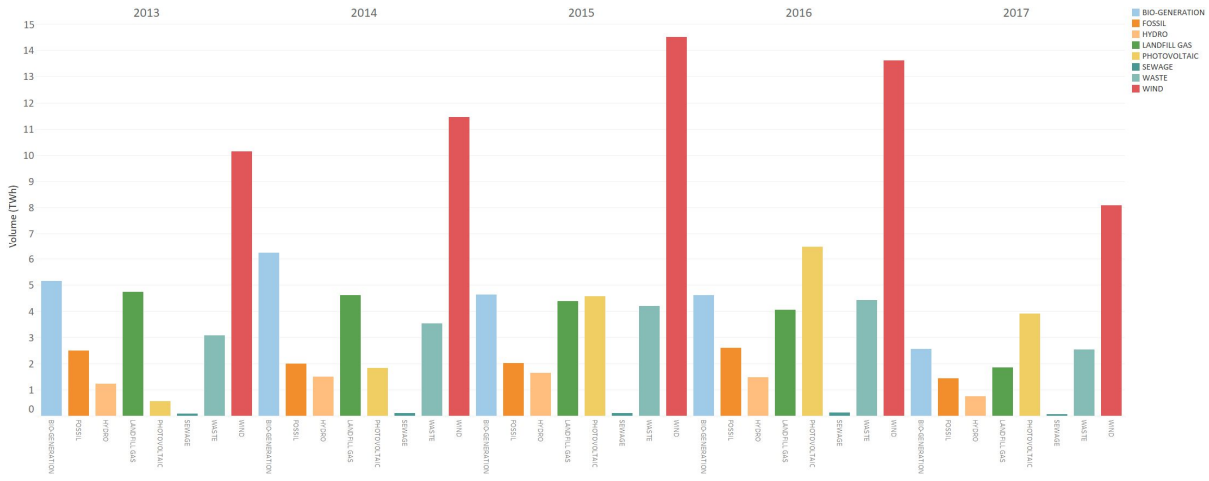
ElectraLink understand that visibility and controllability of DER output is key to ensuring an effective management of DER actions for both NETSO and the DSO and, as the models of the DSO progress, the visibility and data exchange requirements change, for example: Model 1 may require pre- and post-event messaging to allocate which revenue stream the user was targeting, whereas Model 3-6 may require immediate, real-time operational messaging.

To support the DSO transition, and to ensure the solution are compliant with SLC 37, ElectraLink will require active involvement in the system design process, including projects (i.e. Open Networks projects) and trials, to understand and inform the possible data exchange requirements to drive development and investment into the DTN.

These requirements are especially important for ElectraLink as we are planning to re-procure the network and service provider of the DTS to enable the DTS to better support emerging industry processes and models. The DTS transformation will aim to support multiple areas and disciplines driven by industry change – CSS, HH settlement, DNO to DSO, new business models, including web-service and API access to industry data. Procurement will complete in 2018 with service implementation/transfer by May 2020; therefore, involvement in the early stages of the requirements gathering for the DSO transition will ensure that existing DNO technologies can support the DSO transition to minimise cost and impact of this change on operational performance.

Another key capability of the transitioning DSO model is the ability to accurately model and forecast DER connections, load and growth. To support this modelling process, the DSO and GBSO requires data. At ElectraLink, the Energy Market Insight (EMI) team provide a national data set, aggregated and anonymised (where required), covering a number of key industry processes, including detailed analysis of the deployment of Embedded Generation in the UK (see graph 1 below) which can also be performed at MPAN granularity (see graph 2 [question 11]). To support the DSO transition, ElectraLink would need to understand key data requirements for the DSO transition to enable ElectraLink's Energy Market Insights (EMI) team to develop bespoke datasets from the DTN dataset.

Graph 1: UK Embedded Generation deployment in the UK 2013 – 2017 (as at August 2017)




**Q6: What are your views on the principles outlined here to ensure the various routes to market for DER can coexist and compete in a coordinated way?**

The principles outlined in the paper reflect our views that in order for various routes to market exists, the DER market requires the following: Clear and structured communication; visibility of DER actions taken at each level (DSO and NETSO); a framework to remove conflict between networks and NETSO and the model should be flexible to allow for new business models, such as Virtual Power Plants (VPP).

ElectraLink believe that the only way to ensure that multiple actors and processes can coexist within a market successfully is through visibility (data visibility), transparency (structured communication) and cooperation (data sharing). This belief is central to our role as service provider of the DTS and these principles and the DTS has successfully supported vast business model and user changes in the retail energy market. This has been demonstrated recently through the expansion of new participants into the retail energy market, with new operating and business models, which has been facilitated by structured and easy to access data and data transfer. This expansion has seen over 130 new entrants joining the market in the last 3 years.

We believe that the only risk with the principles outlined in the paper is that the principles are too prescriptive for an evolving market – they detail the actors and mechanisms by which these principles will be upheld – and we believe that these principles could restrict new business models or

new actors from the DER marketplace. We believe that the principles that guide the DER access to market should be high level and based around the principles of visibility, transparency and cooperation; in doing so, we believe that these principles will allow for organic changes to the market design.

**Q7: What else needs to be done to ensure distribution network security is maintained for all DER contracted services while at the same time allowing DER the freedom to contract in different markets?**

Provided that the sensitivities described our response to question 3 are visible to DER providers during the procurement phase we do not believe there are any other mechanisms required to ensure distribution network security. We believe if the principles are deployed correctly and focus on visibility and controllability at the distribution and system level, this should ensure that the security of the distribution network is not compromised.

**Q8: What are your views on the principles outlined in this section?**

We do not have any views on the principles outlined in this section.

**Q9: What are your thoughts on pricing curtailment? Are there other mechanisms that should be taken into consideration?**

We do not have any thoughts on pricing curtailment or have knowledge of alternative mechanisms to be taken into consideration.

**Q11: What are your views on how distribution constraints could be managed in the future? We have identified one option above. What other options are available?**

ElectraLink believes that distribution constraints should be managed through: Holistic system operation and coordination; effective management of data and data communication; flexible governance and resilience and diversity. We discuss each of these four management principles below referencing the option discussed in the paper and providing other mechanisms to manage distribution constraints, where appropriate.

**Holistic system operation and coordination**

ElectraLink believe that distribution security and constraints could and should be managed without investment in unnecessary network infrastructure and we believe the DSO should be utilising new technology, such as smart technology, DER technology or storage, and business models, such as VPP or aggregators, instead. Managing these constraints should be performed in a cost-effective manner for the system, whilst promoting the use of low carbon technology. It is with this view that we will judge the options and mechanisms to manage the constraints.

To address distribution constraints, whilst utilising low carbon electricity and without increasing whole system costs, requires a new operational model between NETSO and DSO.

The NETSO and DSO need to co-ordinate activities with one another to ensure that whole system outcomes are met in a cost-effective manner. We believe option outlined in the paper covers this requirement in the short term by allowing the DSO and NETSO to coordinate approaches to DER market management. Also, by allowing DER to trade network curtailment obligations to fulfil

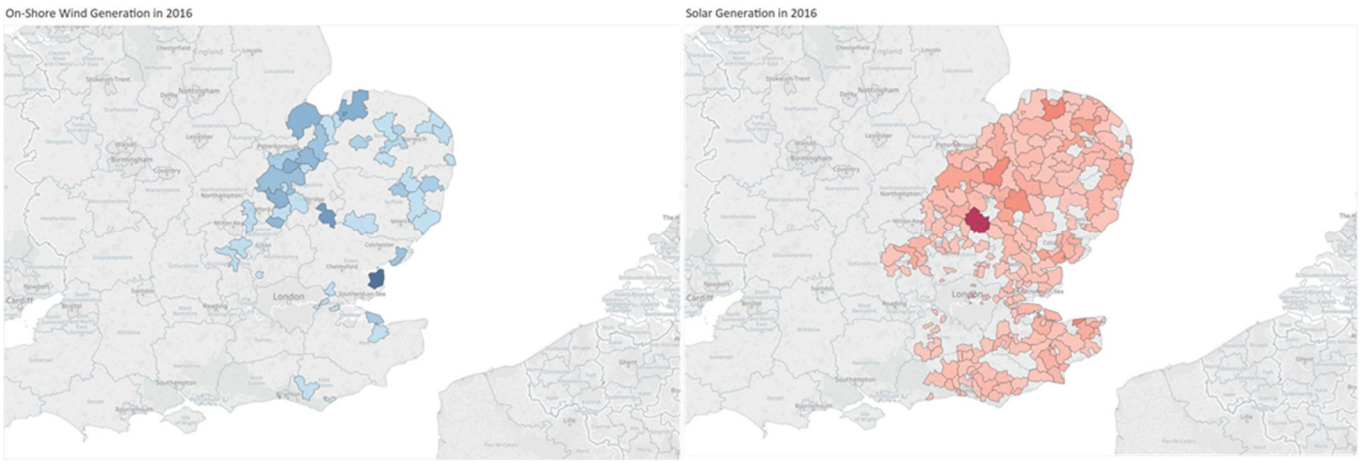
constraint management, opens up the market to more competition and cost effectiveness (in theory, this should create a market for curtailment where the lowest cost option will be chosen), without added complexity for the DSO (as they still only have simple curtailment contracts) and ensuring curtailment needs are met.

**Effective management of data and data communication**

As we have discussed, data is central to the success of any model in the DER market. ElectraLink believe success is underpinned by data sharing between the NETSO and DSO and the use of heatmapping to understand requirements. The models detailed in the paper cover these requirements.

The data available to the system and network operators is growing rapidly and the use of the data to develop innovative and flexible models for network management will be fundamental in driving the shift from network reinforcement to network management. Within ElectraLink, we have already begun developing heat mapping of the distribution of embedded generation across the UK to highlight areas with high penetrations of embedded generation (see graph 2). If this data was combined with information of constraints in the area, this could help drive connection decisions.

Graph 2: Example heat mapping for UKPN (Wind [right] and solar [left])




Use of increasingly available data will help facilitate decision making and, if externally visible, should drive investment decisions in existing or prospecting DER providers. We believe use of this data will ensure that distribution needs are met as the needs of the networks are fully understood. However, it is important that this defined in a structured way that allows its use by multiple participants across multiple models. This will allow the network management models to evolve as the technologies impacting the networks evolve and de-risk the potential for future additional investment.

**Flexible governance**

To manage network constraints, in an environment with increased complexity and requirements, needs the role of regulation and governance to change to ensure that it can account for this widespread and wholesale change in the DER market but also the level of uncertainty around what this market design will look like.

We believe that the management of network constraints requires a change to the governance of networks and the development of a clear flexible governance model that provides certainty to those looking to invest in DER services.

**Resilience and diversity**

Finally, we believe that any model to manage network constraints requires any element of diversity to reduce the risk of single points of redundancy. The management of constraints should not rely on one mechanism or model.

ElectraLink believed that the option discussed – Active Network Management – is key to managing distribution constraints without requiring unnecessary investment into the network infrastructure but also without requiring one mechanism of constraint management. Active Network Management can call on multiple mechanisms for constraint management – DSR, VPP or storage – this ensures that there is less redundancy in the constraint management system.