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Dear Julian,

Enabling the DSO transition: A consultation on the ESO's approach to Distribution System Operation

SSEN Transmission welcome the opportunity to provide feedback on the ESO's Enabling the DSO transition consultation. We broadly support the ESO's vision and 2025 priorities and are fully committed in co-ordinating and working with both the ESO and DSOs to deliver what is best for consumers. Improving the communication and co-ordination between the ESO, DSO and TOs will be essential to delivering Net Zero.

We do have 3 specific points that we feel need addressed:

- Throughout the document, we note little inclusion of the TO in considering what is needed to support DSO development. We currently play a key role in all facets of the transmission network, from future scenario planning through to connection processes or emergency restoration. A whole system approach is required to ensure that no unintended consequences occur.
- We foresee potential issues from service conflicts occurring with ESO and DSO procuring and dispatching DER for their own needs. As a TO we would likely have to deal with implications arising from this. It is essential that there is strong coordination between both parties to ensure this doesn't happen.
- We also want to highlight that flexibility alone will not be enough to deliver Net Zero. Infrastructure development needs to be considered on an equal basis to ensure that short term economic benefits can be balanced against long term environmental and socio-economic benefits.

We recognise the importance of the Energy Networks Association (ENA) Open Networks Project (ONP) and the role it will play in shaping the DSO transition. We urge that this forum remains central to the continuing development of DSO.

We welcome further engagement in this area, and should you wish to discuss any aspect of this response please do not hesitate to get in touch.

Yours sincerely

Andrew Urquhart
Head of Whole System

Annex 1

Question 1 – ESO’s principles to enable the DSO transition

SSEN Transmission broadly agree with the 6 principles outlined within the consultation, we have detailed our views below;

‘The ESO does not have any ambition to be a DSO.’ We agree this is a good principle. It is important that there remain clear boundaries between DSOs and the ESO to avoid any potential conflicts of interest arising from service procurement and dispatch. We also strongly believe that with this clear separation there must also remain a very strong level of co-ordination between DSOs, TOs and the ESO. This will be essential to ensure that services do not conflict with each other and that any potential market gaming opportunity is removed. Development of roles and responsibilities of the DSO, ESO and TO should be informed and considered as part of wider ongoing workstreams, such as BEIS’ Strategic Policy Statement, Ofgem’s Review of System Operation, and Early Competition

‘We believe our existing roles need to evolve to co-ordinate more strongly with DSOs across markets, systems operations and our network development processes to enable enhanced outcomes for customers.’ We agree with this principle and appreciate the role the ESO plays, however we would ask that it be expanded to include TOs. TOs play a key role in understanding the drivers for network development, as we have the local intelligence on what scenarios look likely for our area. This we build up over years from close contact with potential developments, local authorities, and other stakeholders, as well Scottish government policy development for our area. For example, our North of Scotland (NoS) FES work shows the contrast between the GB view of what the future system will look like and how that plays out for our area.

‘The efficient operation of DSO markets will help the achievement of net zero. Whole system operations and co-ordinated decisions across markets will provide strong value to consumers through efficient coordinated decisions.’ We agree with this principle around ensuring that the operation of DSO markets is efficient, given that there will be 6 DSOs covering 14 licensee area. We strongly advocate that the ESO and DSO work closely together to ensure transparency, consistency, fairness and the avoidance of service conflicts.

In relation to Whole System operations, we agree that this will be critical, though we ask that the variance of whole system across different areas is recognised. In the North of Scotland, we have a massive gulf between generation and demand on the transmission and distribution networks. At transmission, we have two directly connected demand customers which are c.30MW. Our NoS FES shows that by 2030 we will have between 19.2GW and 13.1GW of generation connected, with the vast majority being renewable. In the SHEPD area forecasts are for up to 3.6GW of generation versus up to 2.6GW of demand by 2030. Thus, flexibility will most likely involve paying off renewable generation rather than paying on demand to ensure boundary limits aren’t breached. To cover the shortfall of generation typically involves flexible generation, usually Combined Cycle Gas Turbine (CCGT), being paid to operate south of the B4 and B6 boundaries. This does not align with Net Zero. As a result, whole system for our area is about delivering the right infrastructure at the right time to support the transition to Net Zero. Flexibility will play a part, but more to facilitate early connection of renewable generation while infrastructure is being delivered. This needs to be recognised as part of the value proposition for infrastructure development when considering what is the best network development option.

To achieve the best whole system outcomes for network development, there is certain information that the ESO and DSOs hold that will be needed. Both have information regarding the level of flexibility and the scale of what it can do in any particular area. Knowing this allows balancing of the long-term environmental and socio-economic benefits of infrastructure against the short-term economic benefits delivered by flexibility. All of these benefits must be

considered, and it is essential that through the development of DSO that these information flows are transparent and available to all.

We believe that the establishment of DSOs will create more commercial opportunities for flexible assets. This will drive both efficiency and competition across our markets and system operations.’ We agree that there will be more commercial opportunities for flexible assets because of the DSO transition and we could potentially see more market and operation efficiencies. However, these commercial opportunities need to be balanced across the full value chain for consumers. Service provision needs to be considered equally with infrastructure development to ensure that all benefits are considered. This includes environmental and socio-economic benefits that arise from flexibility and infrastructure development. Long term security of supply needs to be considered. Electricity is becoming even more central to GB consumers’ daily lives, as our dependence increases with electrification of transport and heat. Whilst the transmission network is 99.99% reliable, disruptions to supply at this level can have significant impact on those connected to the network. Flexibility, by its very nature, is conditional on contracts rather than pure infrastructure. Implications for non-delivery of services need to be considered for things such as electricity restoration. This will be key in making the right decisions about how to best meet Net Zero requirements.

For this to happen, sharing of market and operational data will play a critical role. This will need to be coordinated between the ESO, DSOs and TOs.

‘Consistent and aligned approaches to DSO and flexibility markets are needed wherever possible. This includes the development of clear roles and responsibilities for DSO.’ We strongly agree with this principle, we see risks in operational and market inefficiency being developed through a misaligned and uncoordinated approach. We would also ask that this is expanded to include TOs as we can provide information and analysis that will be key to understanding potential network impacts arising from DSO operations.

‘Innovative business and technology enablers need to be embraced to facilitate the development of efficient markets. This includes greater operational visibility of networks and the connected parties.’ We agree with this to a certain extent but do note that with new technology comes new risks. These risks need to be understood before implementation to ensure that there are no unintended consequences.

Operational visibility is essential for all parties including TO control centres. Understanding what potential flexibility there is at a distribution level will be key to understanding what ‘normal behaviour’ will be at our Grid Supply Points. This also extends to understanding what transmission flexibility there is in our area, knowing this will allow us to understand what is ‘normal’ network operation and will help with system restoration following unexpected supply interruptions. As a result, the transparency of data sharing of network activity must be carried out by all network owners and the ESO, it will not be enough for this to be a bilateral exchange between the ESO and DSO.

Question 2 – ESO’s proposed 2025 vision

SSEN Transmission broadly agrees and supports the proposed 2025 high level vision and advocate the requirement for relationships between all network owners and operators to be strengthened. The 10 co-ordinated functions between the ESO and DSO we agree are critical. In areas of these functions we would highlight that in our view the ESOs strategy lacks TO co-ordination, which may impact the investment, operation and maintenance of the transmission network. To have the full transparency and co-ordination needed to enable a smarter and more flexible electricity grid, the importance of the TO must not be marginalised throughout the DSO transition. Doing so will risk security of supply and could result in operational and market inefficiencies.

1. Long term energy scenarios We broadly agree with the outlined vision of development of the long-term needs of the system. There does appear to be a lack of TO involvement within this function outlined in the vision, which concerns us. Our work developing the North of Scotland FES shows how a GB wide view of future energy scenarios can look quite different on a per area basis. These differences are better understood by the local TO and DNOs so it is important that they are included in forming the longer-term view. Working together across all network owners and operators is essential to ensure that a proper whole system approach can be taken to ensure that the electricity networks can support the transition to Net Zero.

2. System development Existing network development, and the involvement of different parties, varies currently depending on the network development driver and the scale of the need. As a TO we feed into the annual NOA process, as well as the longer-term Electricity Ten Year Study (ETYS) process. We also engage for large scale capital project delivery through the LOTTI RIIO-2 process.

Through the NOA process we submit schemes that are then compared against all other transmission options at a GB level. Expanding this approach to distribution and including the distribution elements would likely make it a very complex and resource intensive process. We see the benefits from applying this on a regional basis. Having transmission and distribution options for comparison for the north of Scotland would allow optimal whole system solutions to be assessed and identified. We would welcome more clarity around this and are happy to be involved.

We welcome the principle of getting clearer visibility of distribution network drivers without having to wait for GSP or connection applications. However, this information flow must be transparent and available to TOs. In delivering our Whole System Strategy we are currently working to develop BaU processes that allow for both network drivers to be defined, allowing any transmission network development to have a fully informed and identified need. If this information flow was to be just between the DSOs and the ESO then this would make our network development inefficient and cost consumers more.

When it comes to CBAs, and as we have referenced throughout this document, it is essential that CBA benefit inputs are suitable to cover longer term environmental and socio-economic benefits against short-term economic benefits. The current process for NOA and LOTTI projects apply a one year economic assessment snap shot to assess the long-term suitability of infrastructure development. This process does not align with the requirements for Net Zero and needs updated to ensure that the network develops economically, whilst also delivering the vast increase of renewable generation needed.

3. Customer connections We agree and welcome the reference to the impact that DER connections may have on the transmission network and would support full visibility in this area. When applying whole system to customer connections it is essential that TOs are aware of all contracted and potential material, be it on an individual or aggregated basis, distribution demand and generation connections in an area. It is also essential to understand the

nature of these connections, i.e. what level of firmness they have, as well as other flexibility associated with these connections. Knowing this will allow us to better quantify the need for network development in the area.

Supporting an increase in DER applications which effects the transmission system may result in the facilitation and requirement of a new/quicker product. We would highlight that the risk in increased applications, would potentially mean that shorter turn-around times would be required, this puts additional pressure on resources. It is key to note that there would have to be industry code changes to also accommodate this which is commonly agreed by code parties.

Whilst we agree that customer connections need to be easy and consistent, this must be within the boundaries of the complexity of the process. The current connection processes are not too dissimilar however we recognise that to co-ordinate with the DSO, adjustments may be required to create customer connection guides and methodologies and fully identify the needs and timescales for the individual customer. We foresee further alignment between the transmission and distribution connection process being difficult to fulfil in particular aligning timescales.

We agree that flexible resources can and should be used to alleviate constraints within areas of the network. That said there is a risk in proposing the best location that could provide the most value. As a TO this is not our place and is against our licensing conditions. The customer must set the terms of the connection. The customer can however ask for feasibility studies to be undertaken to supplement their decision-making process.

Whilst we agree that the integration of online connection processes should take place, the design and implementation is not quick. We are due to complete this work at the end of T2, it is also worth noting that linking this information with DSO / ESO / TO connection processes is something that will come with technical and logistical challenges, something that ENA is exploring.

4. Network access planning We recognise and agree that activities on a network will affect adjacent networks and potentially the system as a whole. Having visibility of the nature and type of generation and demand across transmission and distribution will be key when it comes to accessing these networks for construction, operations, maintenance and fault management. Not having visibility could lead to unexpected power flows and voltage conditions when establishing planned outages and lead to delays in accessing networks. This will affect the planned outage works and could result in increased customer and consumer costs. Likewise, when there are unplanned fault outages, lack of visibility could affect our response, which in turn could lead to delays in restoring supplies and affecting local customers. A whole system approach between all parties will also support the key principles in the new single GB NAP, ensuring both short-term and long-term outage plans are accurate and transparent for connected customers, and give clarity to the TOs on background conditions whilst developing innovative enhanced services to assist the NGENSO in minimising system operational constraint costs. It is important that TOs are included to ensure that all impacts are identified and accounted for.

5. Service procurement We agree that service procurement needs to be coordinated between the ESO and DSOs. As a TO we do not directly procure or have visibility of services being undertaken on our network or the distribution network. As DSO services increase and can either be procured for distribution or transmission needs, there is an ever-increasing risk of services conflicting, leaving us with operational issues to contend with. The ESO and DSOs must collaborate and coordinate their approaches to service procurement otherwise DSO will cause operational and network development issues for us and users. We strongly urge that there be transparent procurement of services to ensure that no service conflicts can occur. We also request that we have visibility of services being procured so that we can play our role when it comes to things like electricity system restoration.

6. Charging and Access We agree this is a key topic to consider as transitioning to a DSO world and Net Zero. There are a number of reforms aimed at charging currently. The Targeted Charging Review is undergoing implementation whilst the Forward Looking and Access Significant Code Review is still being developed. Both pieces of work have the potential to affect user behaviours, either in where they seek to connect, how they seek to connect, when they seek to connect or for what purpose. Currently it is hard to say what these will result in but understanding the nature of the access rights that DER will have will be important when it comes to managing our network. If DER does end up paying wider TNUoS elements, then understanding their associated access rights will be essential in understanding what will be needed from our networks. Also, the potential reforms may drive extra penetration of flexibility across distribution networks, having visibility of those will be essential for network operation.

We also believe that wider reform of TNUoS is necessary to enable the transition to Net Zero. This will bring further uncertainty to charging arrangements and associated user behaviour. All industry parties must work together to ensure that charging signals do not conflict or provide perverse incentives.

7. Codes and frameworks We too recognise the importance of codes and frameworks when it comes to establishing roles and responsibilities relating to the electricity networks. We would suggest that the TOs are included in this to ensure that codes do not conflict. We have seen a number of issues where CUSC mods do not translate well across to the STC, which can cause confusion for those parties affected. Whilst developing the frameworks for DSO operation we suggest that TOs are involved, where relevant, in determining what those codes should look like. For example, through Grid Code OC7 (Operational Liaison) we have responsibilities when it comes to working between control centres. These must be coordinated with the D Code to ensure that the network is run efficiently.

We reiterate our views from BEIS' consultation on reforming the energy industry codes in 2018 that licensees should have the rights to approve mods where the systems, networks and services for which they are responsible are affected. There should be no dilution of current appeal rights under a future framework. Licensees are often best placed to provide guidance, views and technical expertise – particularly with regards to technical arrangements but also on practical implementation and wider aspects.

We overwhelmingly agree that there is a need for digitalisation, simplification and standardisation of the energy codes without omitting the technical complexities required. We look forward to the Energy Code Review and suggest that development of the DSO codes and frameworks must be considered as part of this work.

8. Service dispatch We recognise that DSOs will be procuring an ever-increasing level of flexibility from DER and agree that this needs to be standardised across the ESO and DSOs to allow better user choice and more efficient consumer outcomes. We also recognise that this could cause potential service conflicts between distribution and transmission dispatch, which could manifest as operational issues on our network. We urge DSOs and the ESO to work together to reduce this risk.

9. Operation liaison We support the view that this is a crucial topic to consider and develop in supporting transition to a DSO world. As a TO we already have a role to play in a number of scenarios, including Electricity System Restoration. These practices we feel work well and are keen that these are expanded upon to include DSOs.

10. Incident planning and management We agree that ESO and DSO control centres need to work together during incident planning and management, but that this activity must be expanded to the TO control centres. We currently have a role as a TO in these scenarios under Grid Code OC9 and our involvement needs to be considered and included when the plans are being developed and implemented.

Question 3 – ESO’s Proposed Next Steps

This consultation outlines clearly the ESOs vision of what the DSO transition will look like in 2025. The proposed next steps we feel have the potential to address potential conflicts between ESO and DSO services.

We would also like to highlight our reservations on the lack of inclusion of TOs to enable a better whole system outcome from the transition to DSO. This we feel should be addressed in the next steps.

We would also like to see more of a whole system approach being undertaken to allow for flexibility and network infrastructure delivery to be considered on an equal basis. There is a risk that focusing on flexibility as a long-term solution can lead to outcomes that are not aligned with Net Zero and will cost the consumer more in the longer term. We would like to see more consideration of a common evaluation methodology that allows equal comparison between flexibility and infrastructure to deliver what is needed for Net Zero. Focusing on long term Net Zero requirements will allow short term economic benefits associated with flexibility to be equally balanced against long term environmental and socio-economic benefits. Development of this should be transparent and collaborative to ensure long-term consumer benefit.

Where appropriate we welcome full, open and transparent coordination and communication from across all network owners and operators to ensure the DSO transition is a success.