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Copies: Rebecca Barnett, Steve McMahon.

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Dear Akshay, Rebecca and Steve

### **SSEN Distribution follow up to SSE Group response: Open letter on Connections reform**

1. This is SSEN's Distribution follow up to the SSE plc response to Ofgem's Open letter on Connections Reform (the 'Open Letter') published on 16 May 2023 to address connections challenges. This document supplements our SSE plc response and provides some more detailed and specific insights from a Distribution perspective.
2. Connecting customers to our network to facilitate economic growth and net zero is one of the core purposes of our business. We are unique in having licence areas in the south of England (where we are seeing a significant acceleration of demand) and the very north of Scotland (where the volume of renewables on the Transmission network places constraints on the generation we can connect at Distribution). Consequently, we are particularly well placed to comment on the full range of challenges around connection policy and offer solutions to feed into Ofgem's policy development.
3. We provide a detailed response to the questions raised in **Annex 1** to this letter and below provide a summary of the challenges, the work we are undertaking, comments on the open letter and thoughts on other wider actions which would support connections reform.

#### Increasing challenges in enabling connections

4. **As we transition to net zero, fast changing technological and societal developments are driving spikes in connection requests at transmission and distribution level.** In the South, our West London Network is perfectly situated for data centres and we have seen a total of 29 data centres, totaling 1.3GW, seeking to connect in the last 18 months – with some individual projects reaching 200MW, a level of demand that would normally connect at transmission voltages. These large spot loads were not forecast on our network (they “should” be transmission connections). With capacity at Transmission constrained they have looked to see where there was capacity on the Distribution network, where we are obliged to offer a connection to anyone who requests a quote. This abnormal activity has had significant impacts on our longer term network planning. In addition, flexibility is not a viable option to connect these loads, given their enormous size (in a distribution context). We are also seeing a spike in microgeneration, particularly in response to the higher costs of energy, with an increase of 200% in the last 12 months. In the North, our SHEPD region has seen its distributed generation pipeline triple from 3.7GW to 9.6 GW in the last 18 months.
5. The ENA's Strategic Connections Group (SCG) has calculated there is a pipeline of around 320GW of generation projects (well in excess of current installed capacity, 76.6GW<sup>1</sup>). This gives us a strong sense

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<sup>1</sup> [DUKES 2022 \(publishing.service.gov.uk\)](https://www.dukes.com/uk/2022/06/01/publishing.service.gov.uk)

of where to invest in the network, however it remains unclear if the current mix of projects in the contracted queue is optimal to move forward to connection from a whole system perspective. **We either need stronger wholesale market signals to influence which of the contracted capacity moves forward to build, or move towards greater centralized planning at national and local level to align queue management with system needs.**

6. It is unsurprising the queue is so large: developers facing widespread constraints have acted rationally and looked to develop options at multiple locations so they can move quickly when and where-ever capacity becomes available. It follows that it is almost certain that initially wherever new capacity is created it will fill almost immediately. Similarly, it follows that the initial wave of capacity additions should look to “over-size” (i.e. where possible allowing for greater load than a 2050 projection) because initially capacity will create demand. Only once the constraints have been widely reduced at both Transmission and Distribution will the connections market normalise.
7. We are seeing more and more **distribution projects being caught in Transmission constraints**, including behind the meter generation as small as 50kW. In many cases, we will have capacity on our networks which cannot be allocated to customers because of constraints on the Transmission network. Visibility of these constraints (particularly for demand in our SEPD region) is poor and so we must submit individual customer connection requests to the ESO to assess the Transmission impact on those customers. This results in a quotation process which is a minimum of nine months and *circa* 40% of customers seeking connection to our network are subject to this process. As the party with the relationship with the customer, we seek to manage the customer through this process but do not have control or visibility over it, which in turn reduces the quality of customer service we can provide. At the end of this quotation process, distribution demand customers in our SEPD region are now frequently receiving Transmission connection dates of the mid 2030s. While we understand some of this may change as a result of the ESO’s remodeling of storage, customers still don’t have certainty of this yet.
8. Unsurprisingly this situation generates complaints, with some frustrated parties seeking to use the complaints process to try and speed up their developments.

#### Work already underway to accelerate connections in our regions

9. Facilitating new connections is at the heart of our RIIO-ED2 Powering Communities to Net Zero plan. Indeed, our **RIIO-ED2 plan included** over £200m for new connections-related reinforcement, in addition to c. £300m of baseline load-related investment. Our RIIO-ED2 plan also included over £260 investment in new digital systems to improve the quality of data which we can provide to customers and stakeholders.<sup>2</sup>
10. **We are already taking action to improve our customers’ connection experience and speed up connections.** We are playing a key role in the ENA’s SCG, leveraging our experience of West London to document practical learning of new approaches to queue management, expanding and standardising the tool kit of options open to other DNOs. Importantly this includes providing clearer technical limits of the Grid Supply Point (GSP) capacity available to DNOs to allocate to their customers. We hope that alongside other reforms, this will reduce the number of our connecting customers who have to go through a Transmission impact assessment.

#### Connections reform must be accompanied by wider action

11. **Connections reform must be guided by a clear overarching vision, which Ofgem and DESNZ must clearly articulate.** Connections reform interacts with a number of other key policy areas, including DSO governance, local energy institutions, the evolving role of the FSO and REMA. It is becoming increasingly challenging to make medium or longer-term decisions on connections policy

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<sup>2</sup> Note these were the figures included in our Business Plan, not what Ofgem awarded in RIIO-ED2 Final Determinations

without a vision of how the various policy strands fit together to deliver net zero. Industry is already making the incremental changes in stages 1 and 2, but an overarching vision will be required before stages 3 and 4 are explored.

12. **Connections reform must be complemented by a regulatory framework which actively enables long-term strategic investment in the network**, in line with government targets and the draft Strategy and Policy Statement for Energy Policy in Great Britain.<sup>3</sup> The upcoming RIIO-ED2 uncertainty mechanisms will provide significant opportunities to unlock investment, and careful consideration is required in designing the next regulatory framework to ensure that assessments of efficiency recognise the long-term benefits for customers and wider society of investing ahead of need. The price control methodology must move away from a focus on short-term cost reduction and ensure that companies are not penalised for making decisions that are more efficient in the longer-term but could increase costs within period.
13. **In this context, we support the introduction of “Regional Energy Coordinator role,” with a strong focus on whole system / cross-sector coordination**, aligning plans at every level of the system, and ensuring true democratic accountability into planning processes across the energy sector. This would further facilitate transparent decision-making on strategic investment which aligns with local and national needs. It will however, take time to set up this role, and it is critical that we do not lose pace and continue, as an industry, to build on our existing approaches to forecasting need and co-creating local plans.
14. Currently, **processes for securing project consents** are one of the main contributors to delays in the delivery of nationally important grid projects; the status quo cannot be maintained otherwise we risk achieving the 2035 targets. This same challenge is experienced in relation to **land rights and wayleaves** which can also impede swift and frictionless connections. To deliver the infrastructure deployment that is needed we need a system that is supportive of what is trying to be achieved, without posing additional barriers. It is important too to flag the importance of coordinating regimes across devolved areas; the Scottish planning and consenting regime should ideally therefore be modernised alongside planning in England.

#### Next steps

15. We look forward to working with Ofgem and wider stakeholders on connections reform and would welcome the opportunity to discuss some of the concepts and ideas outlined in this response in more detail with your teams.

Yours sincerely,



Patrick Erwin

Commercial Director, SSEN Distribution

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<sup>3</sup> [Strategy and Policy Statement for Energy Policy in Great Britain: consultation \(publishing.service.gov.uk\)](https://publishing.service.gov.uk)

## ANNEX 1

Below we provide detailed comments on each of the four high level questions raised in the Open letter.

### 1. The nature and priority of connections issues (Section 1 – The challenge)

We consider that the summary of challenges provides a good summary of the current situation. We are unique as a DNO in having a licence area in the South where there has been a surge in large demand customers seeking to connect and also in the North of Scotland which is a hub of renewable generation seeking to connect.

#### **What we are already doing:**

- **West London Ramping** – For our West London area we have agreed a Materiality Trigger between SSEN and NG ESO on a GSP-by-GSP basis. For the affected West London GSPs, this was deemed to be 1MVA. For those customers connecting at 11kV with requirements below this trigger, or for those who can ramp their demand on an annual basis below the trigger, they are no longer required to go through a Transmission Impact Assessment. This results in several customers no longer being contractually constrained by the Transmission network, and therefore not reliant on Transmission reinforcement to connect. It is expected that SSEN, NGESO and NGET will engage regularly to enable understanding of the number of Distribution demand connections offered under the 1MVA trigger in West London, so volume can be understood, and trigger reviewed if necessary;
- **Queue Optimisation** – We are currently working with our colleagues in the ENA and all other DNOs on the SCG to progress solutions to optimise our existing Connections queues. These solutions will establish a consistent approach to progressing contracted connections by either termination, variation to new milestone contracts, or promotion within the Distribution queue;
- **Transmission & Distribution interface** – Agreed technical limits for GSPs are being rolled out across the country from August this year where the adoption of Appendix G process and ANM/DERMS will allow DNOs to manage their capacity within this limit. This will provide us with better visibility of the network headroom which we can allocate to our customers and reduce the delays associated with submitting connection requests to Transmission for review;
- **50kW issue in SHEPD** – Currently, in our SHEPD region, we are required to submit a Transmission Impact Assessment to the ESO for all generator connection requests greater than 50KW. This is limiting the commercial viability of customers deploying small generation schemes, especially photovoltaic solar panels (PV), behind the meter to offset their current energy use with zero export to grid. We have been working with SHETL to find solutions to better assess network capability and agree new limits to increase this threshold at each GSP. Having successfully developed a technical approach, we are currently preparing to trial a solution at our Coupar Angus GSP where this would increase this threshold to 200kVA. If shown to be successful we will then consider rolling out across the remaining GSPs where it will have benefit to all customers. This trial assessment to ascertain new limits for GSPs in SHEPD/SHETL has been shared with the wider Transmission and Distribution Interface group in the ENA Strategic Connections Group for consideration in development of GSP limits.
- **Flexibility** – We are maximizing the flexibility of customers on our network to reduce peak demands and help new customers to connect. We have run a global tender for flexibility across both our licence areas and currently have 460MW contracted with an ambitious target of 800MW by the end of this year.

- **Transparent data** – Improved transparent data being made available to our stakeholders in our new heat maps, network development statement and to be updated long term development statement.

### **Challenges not covered in the open letter**

Below we provide detail on a number of challenges we are seeing around connections. We are looking to resolve these to help connect more customers where we can but some require support from Ofgem and Government. We have indicated who we consider is best placed to lead on each.

#### **a) A strong focus on strategic investment would be further enhanced by the introduction of “Regional Energy Coordinator role” (Ofgem):**

While some big steps forward have been taken into the RIIO-ED2 price control, when compared to Transmission, the process for strategic investment in Distribution networks still has a number of practical barriers.

In Transmission, Ofgem’s decision on Accelerated Strategic Transmission Investment, allied with the role for the FSO to decide on needs case for investment has provided a clear model to progress investment on an ongoing basis. At Distribution, we are reliant upon specific reopener windows for Primary load schemes. This requires Ofgem to sign off needs cases at set points in time. This mechanism is new for RIIO-ED2 and while welcome, there are uncertainties over how it will work in practice and the level of justification required. We are keen to work with Ofgem to take an example case for strategic investment to remove these uncertainties and provide a clear framework.

In addition, going forward, we consider that a separate regional coordinator role could help accelerate strategic investment on the distribution networks, in the following ways:

- (i) ensuring the forecasting we use is informed by and consistent with broader energy plans and national targets, for example through setting common assumptions for DFES;
- (ii) flagging and resolving issues where electricity network plans don’t synergise well with other vectors – for example housing and heat pump plans – which form part of the broader regional energy picture;
- (iii) aligning plans at every level of the system; local plans to regional, and regional to national; and
- (iv) delivering a ‘local voice’ and true democratic accountability into planning processes across the energy sector.

We have outlined the case for this in our response to Ofgem’s consultations on the future of Local Energy Institutions and Governance. We see it as fundamental to enabling more strategic investment on the network which is fundamentally linked to resolving some of the capacity constraints on the network.

#### **b) Ability to secure contracted capacity at Transmission for forecasted Distribution growth (SSEN and ESO)**

As a DNO we provide the TOs in our area and the ESO with 8 year forecasts of our demand and generation growth (week 24 data transfer). Historically, these forecasts have been used to inform Transmission network planning. With the scale of connection requests to Transmission and Distribution any headroom on the Transmission network has been eroded and subsequently, many distribution connections requests cannot be met until Transmission reinforcement is completed.

As highlighted above, the ENA SCG is looking at introducing GSP limits to provide greater clarity on the headroom available to DNOs, which they can allocate to customers seeking to connect at Distribution. While this will provide greater visibility and control for DNOs we are concerned that it still drives an incremental approach to building out the network, since once that headroom is used up there is likely to

still be a need to trigger Transmission reinforcement to meet forecast demand for general reinforcement and/or individual customer connections triggering those Transmission works beyond this limit. There are then some long lead times required while that reinforcement is undertaken which causes delays in connection or facilitating LCTs.

Further, a key barrier for Distribution demand customers accepting the Transmission offer is that they are required to put up securities and liabilities for the Transmission works they trigger. For demand customers these securities ramp up over time for the full cost of the Transmission works. We have examples of where these exceed £100m over 10 years. Customers struggle to get bonds to cover these amounts and therefore cannot accept the offer. Consequently, the investment is not triggered and we go through the same process with the next customer seeking to connect.

We have committed to take two specific projects forward to help resolve this issue and help ensure capacity is available for customers when they need it.

- **To explore with the ESO the process to enable us to contractualise our forecast capacity requirements:** This will mean that where our DFES indicates that we are forecast to exceed the agreed technical limits at the GSP, we will trigger a mod app with the ESO ourselves. This will enable more strategic investment at Transmission prior to customers requesting capacity;
- **To raise a CUSC modification to reduce the securities and liabilities required from demand customers at distribution that trigger Transmission works:** Currently, customers connecting generation at distribution level securitize NGET works using an allocation methodology developed under CUSC modification proposal (CMP) 192. This results in an apportioned value of wider Transmission works based on location, capacity and time to connect. We will look to raise a proposal for a similar methodology to apply to demand customers.

We are aware that the raising of CUSC modifications is currently discouraged due to the volume of wider change and uncertainty. However, this is an example of a specific issue which needs to be addressed urgently and we would welcome Ofgem's support in raising this.

### **c) Land rights reform (DESNZ)**

To successfully reach net zero, unprecedented levels of investment in new and existing infrastructure will be required. This involves considerable engagement with customers and stakeholders to secure the appropriate consents with private landowners and all necessary planning permissions. The existing system is too costly (expensive statutory processes) and too slow (it can take several years for a necessary (compulsory) wayleave to be granted). Reform of the current system is urgently required to remove barriers to building the necessary electrical infrastructure. The scale of the challenge requires legislative change to unlock fast-track, low cost processes for the benefit of customers.



## **2. Priority areas of focus for Ofgem (Section 4 – What you can expect from us)**

The open letter highlights the work already underway through the ENA and the ESO. As highlighted above we are playing a key role in the ENA work and we consider it is the best way to ensure new issues emerging in various locations and shared solutions are developed and standardized. We have welcomed Ofgem's participation in this industry work to help ensure that where solutions to aid connections require regulatory change, those changes can be made. We make comments below on some of the ideas outlined in the open letter:

### **Ability of charging or access signals to improve utilization of the system and allocation of capacity**

We need a charging regime that complements quicker connections and strategic network investment. This should be a key area for consideration under Ofgem's relaunched DUoS SCR, where more granular and/or variable DUoS charges risk increasing investment uncertainty and introducing signals that could conflict with strategic investment choices designed to remove bottlenecks in the network. Since the original SCR was launched in 2018, we have driven significant growth in our markets for contracted flexible connections (2.5GW under contract since 2019). This offers a more refined tool for managing congestion that can be targeted in the most challenging areas of the network. We encourage Ofgem to refocus near-term DUoS reforms on streamlining and simplifying the charging arrangements. Further effort may be better spent considering the longer-term linkages between connection charges, use-of-system charges (distribution and transmission) and procured flexibility services in the context of future wholesale market reforms being actively considered under REMA.

### **Potential changes to the current connections queue methodology and whether these changes should be applied to parties already in the queue.**

We think this should be a priority area of focus, building on the industry work already underway. With so many customers in the connections queue at Transmission and this having a knock-on impact to Distribution, we as an industry need to ensure:

- a) That capacity is allocated to those customers who are ready to make use of it; and
- b) That some customers can come to the front of the queue where their connection can help get more capacity out of the existing network e.g. storage or customers who can provide services.

There is already considerable work underway under part a), particularly introducing milestones for Transmission connecting customers and developing the 'shovel-ready' processes. We would welcome further engagement with Ofgem on the merits of applying these milestones retrospectively to customers already in the queue. While we acknowledge the impact retrospective application could have on individual customers who have committed funds to a project, with so many customers in the queue we consider that the benefit of the changes will be limited unless we can apply the milestones to customers already in the queue and not moving forward.

Further, in West London, we have some large customers at the front of the Distribution queue who have triggered the need for significant Transmission works with completion dates in the mid-2030s. On a strict interpretation of first come, first served, this means that we cannot allocate available Distribution capacity to smaller customers down the queue, even though they could connect without triggering Transmission works. We are developing an approach where we can move those smaller customers forward to make use of available capacity, provided there is no detriment to the customers further up the queue.

On b) we are keen to work with Ofgem on how this principle could be taken forward and developed further. We would support a positive discrimination for technical reasons which would create capacity for more customers to connect. Further, with finite capacity, resource and supply chain available, there could become a point where it is reasonable to prioritise LCTs and NetZero technologies over others without

impacting on local housing plans, community projects and local economies. We suggest that we need to understand the impact of the other remedies discussed in the open letter before taking such a radical step.

#### **Amendments to the Connections Standards of Performance**

We are not convinced that changing existing Connections Standards of Performance would help deliver the ambition set out in this open letter. Lengthy connection queues are not the result of connections not being delivered to connections standards but rather due to lack of available capacity. It could perhaps be beneficial to explore longer delivery timescales for large customers to allow for more accurate and detailed designs to be processed or a two-stage process, like with ESO applications, with a budget up front to reduce workload for design teams.

#### **Ongoing work to ensure that DNOs' Long Term Development Statements (LTDS) are based on consistent data standards and improve data sources across Transmission & Distribution**

The LTDS needs to be developed to provide our short-term forecast demand in line with appropriate DFES scenario informed by our stakeholders for each GSP network and align with the Network Development Plan, which provides medium to long term view for all scenarios. These then need to be used for data transfer to inform Transmission system and network operators to provide longer term visibility for developing their networks as currently Transmission reinforcements timescales are more than 10-15 years.



### **3. Our proposed objective, outcomes and guiding principles (Annex A);**

We welcome Ofgem setting out the proposed objectives, outcome and principle for reforms. We provide some comments on each below:

#### **a) Outcomes**

We agree with the proposed outcomes. We suggest that it would also be useful to include something around transparency of the impact of reforms. There is (rightly) a significant amount of focus of changes around connections which is ongoing at present, across the industry. For smaller customers, this is difficult to navigate and to understand how these potential changes will impact them. We are engaging with our customers to explain the changes we are driving but don't have visibility of all industry work e.g. ESO reforms or any planned Ofgem work. It would be helpful if all reforms/changes across industry/Ofgem/DESNZ could be captured centrally with a clear timescale for implementation and summary of what that could mean e.g. significant changes in queue order, more information available etc.

#### **b) Principles**

Again, we mostly agree with the listed principles. Principle 4 mentions consistent outcomes across Transmission and Distribution networks. Care needs to be taken that this isn't read as a consistent approach. With such sudden changes in the nature of connection requests on our network, we need the flexibility to trial something different in a certain location to learn while doing and then roll out learning. These trials shouldn't be limited to innovation projects, which take time to implement. As we are doing at Coupar Angus we want to be able to deploy a solution to help get a customer connected, learn from the experience and then standardize across industry.

Further, we are concerned that Principles 3 and 5 may curtail the scope of work Ofgem is able to take forward via connections reform. Principle 3 is about making clear progress between now and 2025, while Principle 5 is that reforms are resilient to wider reforms. As highlighted in our cover letter it is difficult to untangle connections reform from wider policy reforms around REMA, local area energy institutions, etc. It would be beneficial to overlay the timescales for these wider policy reforms with 2025 in mind. Without fully considering these wider reforms and integrating them, we are concerned that the changes which emerge from this open letter will be limited to work already underway at industry level i.e. stages 1 and 2 in Ofgem's open letter. Stages 3 and 4 require careful thought as part of wider reforms, not constrained by them.

#### 4. The illustrative reform stages and options for consideration (Annex B).

##### **Stage 1 – Incremental improvements**

We strongly agree with the items listed in Figure 2 under incremental improvements and note much of this is already under way through ENA and ESO and individual DNO work.

##### **Stage 2 – Improving Transmission/Distribution interface**

Again, we consider this is a crucial area. As highlighted in the cover letter, the key outcome has to ensure that the current high volume of small distribution projects are not caught in complex, time consuming and lengthy Transmission processes.

We consider that technical limits are a key part of this but as highlighted under question 1, we also need to clarify on what happens when those limits are eroded. DNOs need to be able to secure contracted capacity on the Transmission network for our demand and generation forecast growth.

Further, to help manage our network, we need timely, accurate and transparent data sharing e.g. week 42 data to then update the technical limits along with GSP compliance forecast. Finally, building on the work already underway with the ESO, we need a clear agreed process (with set timelines) for joint network planning options at GSPs. Our experience to date is that progress can be slow and ad hoc and this doesn't work when you have rapid connections growth. We would like to build on our work with TOs and ESO to set out clear roles and responsibilities on joint planning and where necessary codify these.

##### **Stage 3 – Controlled access**

We provide some comments below on some of the areas mooted in the open letter.

- **Application windows:** This is being discussed extensively for Transmission connections as part of the ESO reform proposals. We do not think this is practical at Distribution level as our customers are smaller and do not have resources to manage different application windows. Further we consider that at Distribution we need to keep striving towards 'just in time' network investment to facilitate connections without delay. We have concerns that the current ESO reform programme has not sufficiently engaged with DNOs or Distribution customers. With 40% of our customers currently impacted by Transmission constraints the process needs to work for these customers as much as larger Transmission customers. We would welcome support from Ofgem to ensuring there is adequate consultation with all stakeholders, before any decisions are taken around ESO reforms.
- **Trading or auctions mechanisms:** We would need to see more detail on how this might work in practice but would highlight that a similar concept was considered as part of Ofgem's Access SCR but not taken forward due to concerns over how it would work in practice and also encouraging customers to hoard capacity rather than release it into the queue. Further any auction type approach for capacity would need to take into account wholesale market reforms via REMA to ensure that the two policies align. We struggle to see how this approach could work at Distribution level and if implemented at Transmission, thought would need to be given to how capacity is secured for Distribution customers who may not be able to directly participate in auctions.

##### **Stage 4 – Planned and coordinated connections**

##### **Specific connection types or capacities incentivized in certain areas to support system needs**

With so much capacity in the contracted queue, we agree that there needs to be a way to prioritise what connects first. The milestones approach around prioritising shovel ready projects will help but it does not address the point on whether we have the optimum mix of generation coming onto the system at any

point in time. This requires wider reform which could either be through shaper wholesale market signals or prices for system services, or more centralized control and coordination of queue management in a similar way to the Irish Model.<sup>4</sup> This is a fundamental policy decision and requires a joined-up approach with wider policy reforms such as REMA, governance for local energy institutions, DSO governance and cannot be looked at in isolation.

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<sup>4</sup> [CRU17309-ECP-1-Proposed-Decision-FINAL.pdf \(divio-media.com\)](#)