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Joint letter from SSEN/NGESO/NGET

12 September 2022

Dear Mayor,

Update on new approach to demand connections in West London to facilitate housing

As you are aware, customers seeking electricity connections in the West London area have been advised of significant delays. We recognise the impact of these delays on the much-needed house building programme in West London, as well as on decarbonisation and economic growth in the region.

Following careful consideration of the technical situation, Scottish and Southern Electricity Networks (SSEN), the Electricity System Operator (ESO) and National Grid Electricity Transmission (NGET) have jointly agreed on an innovative approach that would allow smaller demand customers, such as many of the housebuilding companies, in West London to connect to our network. A full background, detail of the proposal and its impact on housing in West London is set out below.

The work we have jointly undertaken with the GLA has helped to gain greater visibility of the pipeline of housing projects planned for West London over the medium to longer term. We will continue to proactively work with your team to facilitate the network capacity required for this pipeline of developments.

Background

In recent months, customers seeking electricity connection in the West London area have been advised of delays of up to eight years. These protracted timescales have been driven by a number of large demand customers seeking to connect to SSEN's distribution network and the transmission network. SSEN alone has 18 accepted connection applications of over 10MW – the total capacity of which is equivalent to at least 260,000[1] new homes across the West London

[1]Assumes 5kVA per house which is probably a mixture of gas and electric heating. Footnote 4 below provides more detail on how average household capacity has been calculated.

area. The sudden increase in the volume of these requests, combined with 443MW of contracted demand connections to the transmission system, has triggered the need for significant network upgrades to the upstream transmission network in the West London area and, in some areas, the local distribution network.

Transmission network upgrades are substantial engineering projects which, in this case, need to be undertaken in a congested, urban/suburban environment. As a result, customers are being quoted 5-10 years[2] to connect to the network. Current rules governing the allocation of electricity capacity require it to be provided on a first come, first served basis. This means that any customer seeking connection following these larger demand customers must wait until those reinforcements are complete.[3] Consequently, in many areas in West London, any customer above 250kVA (around 50[4] housing plots), seeking to connect to SSEN's local distribution network has been unable to do so until those transmission upgrades are complete, despite there being capacity available in many areas of SSEN's network.

Joint proposal from SSEN, NGESO and NGET to facilitate housing in West London

Following careful consideration of the technical situation, we have jointly agreed an innovative whole system solution that will allow smaller demand projects up to 1MVA to connect at a local distribution level (11kV), without triggering a requirement to be assessed at Transmission. The same rule can apply for demand projects larger than 1MVA, where a ramped or phased build out of projects can be agreed to ensure no more than 1MVA demand increase per year. Appendix 1 provides further detail on ramped capacity profiles and how they relate to this agreed approach.

Table 1 below provides a summary of what this approach means for different types of customers in West London. We have shown here some approximate calculations of how the size of customer (in capacity terms) corresponds to the number of housing plots.[5]

Table 1: Summary of which customers will be subject to transmission constraints under the agreed approach

Type of demand customer	Average number of housing plots per type of customer	Customer subject to any transmission constraints	
		Connecting at the local distribution network 11kV	Connecting at the higher voltage distribution network 33kV
Customers seeking < 250kVA	<50-25	No	n/a[6]
Customers seeking >250kVA and <1MVA	25 -200	No	n/a[7]
Customers seeking >1MVA who will ramp up demand at <1MVA per year	<100-200 per year	No	Yes[8]
Customers seeking >1MVA who will ramp up demand at >1MVA per year– (likely to have a capacity required >10MVA)	>1000-2000	Yes	Yes

[2] These timelines dependent on how long it takes to get consents and planning permission, among other things

[3] As outlined below, the approach of first come, first served is something which is being considered by SSEN, NGESO and NGET

[4] Assumes 5KVA per house as per footnote 1

[5] The average demand from households varies considerably (2.7kVa up to 12kVa) based on the size (flats vs detached houses) and also the degree to which heating is electrified and EV charges are installed. Consequently, figures are presented as a range. Recognising the fact that there will be greater electrification of heating going forward, we have presented this range based on 5-10kVa per house

[6] Not practical for these customers to connect into 33kV network and very

[7] As above

[8] Very unlikely that these customers would connect into 33kV

SSEN, NGESO and NGET will hold monthly technical meetings to review the impact of this approach on the electricity network in the West London area. This will identify any technical issues which are emerging, and we will work together to develop solutions where required. We will keep the GLA updated on the impact of the approach on the network.

What does this proposal mean for housing development in West London?

The agreement that customers who can ramp up demand at less than 1MVA per year will not be subject to transmission constraints is particularly key for large housing developments. By their nature, these developments are constructed, and subsequently energised, over a number of years. The agreed approach will allow SSEN to work with developers to understand the capacity requirements year on year, linked to the development timescale. SSEN will seek to agree a connection approach to align to this timescale aimed at avoiding exposure to upstream transmission constraints.

SSEN has physical capacity at multiple sites across its local (11kV) network in West London and this can now be released to customers. Depending on the precise location of where customers seek to connect, there may still be distribution reinforcement work required to accommodate the full build out of housing developments. Crucially, works to reinforce these networks typically take 18-36 months, compared to the 5–10-year timeframe associated with much larger transmission reinforcements.

Impact of the agreed approach on current connection requests

SSEN has looked at the connection offers issued over the last 18 months to housing developers or parties likely acting on behalf of housing[9], in the West London area. Of the 66 customers (146 MVA) which were deemed as subject to transmission constraints, 42 (64%) would now be able to connect under the agreed approach. The remainder would still require distribution reinforcement to be undertaken prior to connection, albeit with the shorter lead times highlighted above. Appendix 2 provides further details of this analysis.

This provides strong evidence that the agreed approach will reduce contracted constraints by enabling available capacity on SSEN's network to be utilised by smaller demand customers in West London. SSEN is in the process of engaging with customers who previously applied for connection in West London and did not proceed due to the timescales quoted to resolve transmission constraints. SSEN will seek to inform those customers of the new approach, how they might reapply and enable customers to agree a demand ramping profile, where that they are seeking more than 1MVA of demand.

[9] These are Independent Distribution Network Operators (IDNOs) or Independent Connection Providers (ICPs). We cannot always be definitive on the type of customers IDNOs or ICPs are representing and when reviewing our connections pipeline have made the assumption that all represent housing developers to some degree.

Facilitating the GLA's future housing pipeline in West London

We recognise the GLA's ambitious plans for housing development in West London. Implementing the approach outlined in this letter will help remove a key short-term barrier to connection. We are undertaking a range of other activities to help facilitate the future pipeline of housing projects:

- **Delivering on the action plan for West London:** Through engagement with the GLA, SSEN has set out an action plan for West London. We are committed to delivering against this plan which is summarised in Appendix 3:

- **Delivering on RIIO-2 business plans:** SSEN has set out its Final Business Plan to Ofgem for the 2023-28 period.[10] This business planning process has involved extensive stress testing of the local distribution network in West London against a range of demand scenarios. These scenarios have been informed through engagement with stakeholders, which helped derive assumptions on demand growth, including house building rates. SSEN has proposed around £60m of investment in the local distribution network out to 2028 which will release additional capacity for customers, including in West London.

- **Building on engagement with the GLA and stakeholders to strategically invest in network capacity:** SSEN is establishing a specific team to help local authorities, including the GLA, to understand local area energy plans in more detail and what this means for demand and network planning. Where there is a good degree of certainty of future demand, SSEN can include this in its demand forecasting, share it with NGESO and NGET, and provide evidence for more strategic development of the networks to meet the GLA's longer term ambition on housing as well as broader decarbonisation.

Next steps

As outlined above, our immediate next step is to continue to communicate this new approach to customers and enable those customers to agree a ramped or phased approach to connection. We have already started this via engagement with the Home Builders Federation. SSEN will progress its action plan and all parties will continue to work with the GLA to build on the excellent engagement to date and help inform network planning and development. More broadly, we have agreed with Ofgem and other networks to share learning from this issue to help inform the approach taken elsewhere in the country.

Yours sincerely,

Andrew Roper, DSO Director – SSEN **Susana Neves e Brooks**, Head of connections - ESO

John Twomey, Head of Customer management (signed by on his behalf by David Cowley) - NGET

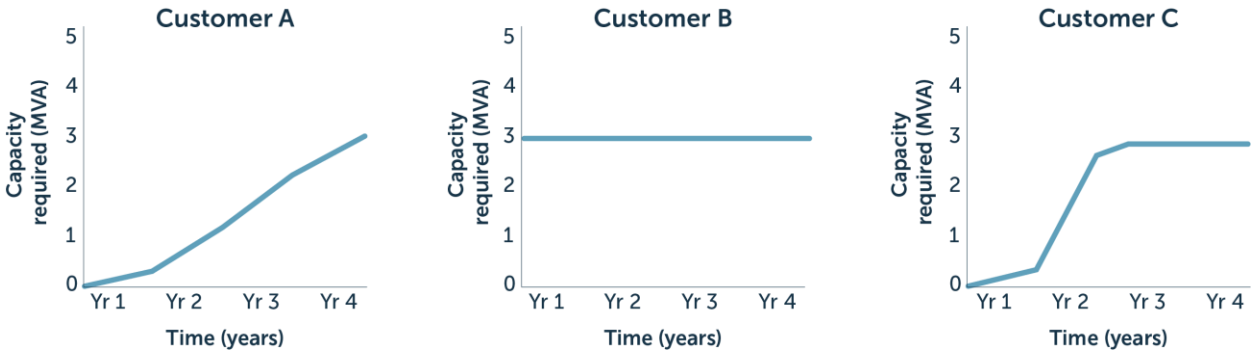
[10] Home - SSENFuture

Appendix 1 – What is ramped or phased build out of projects?

Capacity ramping refers to the profile of maximum demand required by a customer over time. Network operators require customers seeking to connect to the network to state the maximum import (demand) and/or export (generation) which they will seek from the connection. This is stated in the connection agreement and acts as a contractual cap on the demand or generation which that customer can use/export at any time. A ramped capacity profile is what that maximum demand requirement is over time.

Below we provide three examples to illustrate the ramping approach in more detail. Figure A.1 illustrates 3 different hypothetical customers each seeking a connection of 3MVA which would link into SSEN's 11kV network but each with a different ramping profile.

Figure A.1 examples of ramping profiles for demand customers



In the examples in Figure A.1:

- Customer A is ramping demand over time, at less than 1MVA a year and therefore would not trigger a requirement to be assessed at Transmission;
- Customer B is not ramping demand over time and therefore would trigger a requirement to be assessed at Transmission. Where there are any transmission constraints, this customer would need to wait until they are resolve, until it can connect to the distribution network; and
- Customer C is ramping demand over time but at more than 1MVA a year and therefore would trigger a requirement to be assessed at Transmission. Where there are any transmission constraints, this customer would need to wait until they are resolve, until it can connect to the distribution network.

Agreeing a capacity ramping profile can also assist where there are distribution network constraints. It may allow the customer to connect and build out while distribution reinforcement is undertaken, with the aim of completing the reinforcement in time for when the full capacity requirement is needed.

Appendix 2 – Impact of proposed approach on existing housing in West London

SSEN has assessed the connection offers it has made to housing developers and parties likely acting on behalf of housing developers (IDNOs and ICPs), over the last 18 months. It has applied the new approach to identify how many of these customers, would be able to proceed to connection, under the new approach, in the West London area.

Table 2: Summary of the impact of the new approach on housing offers made by SSEN in West London

Type of customer	**Previous constrained at transmission but can now connect to SSEN**		**Previously constrained at transmission – some distribution constraints remain**		**Customer remains subject to transmission constraints**	
	No of customers	Total capacity of customers (MVA)	No of customers	Total capacity of customers (MVA)	No of customers	Total capacity of customers (MVA)
Customers seeking ≥250kVa and <1MVA	27	16.36	8	5.18	n/a	
Customers seeking ≥1MVA and ≤10MVA who will ramp up demand at <1MVA per year*	15	43.29	14	36.74		
Customers seeking >10MVA who will ramp up demand at >1MVA per year	n/a				2	45.24

*This is on the assumption that these customers will have a ramping profile of less than 1MVA per year.

Appendix 3 – Summary of SSEN's action plan in West London

Below is a summary of the action plan previously shared with the GLA. We will continue to provide updates to the GLA on progress and highlight any areas where the GLA can assist in delivering these outcomes.

1. **More granular understanding of existing headroom**
   A. Technical analysis between NGESO/NGET/SSEN to assess any demand headroom available.

2. **Use of flexible solutions to deliver additional capacity**
   A. Initiate a global call for flexibility in West London.

3. **Ensuring contracted capacity is used efficiently**
   A. Review the connection queue at each of the six West London GSPs.
   B. Seek to terminate projects in the queue which are not moving forward to energisation.
   C. Run an amnesty on unused capacity for existing customers.
   D. Assess queue management approach and consider any revisions needed.

4. **Stakeholder engagement**
   A. Work with the GLA and stakeholders to gain a granular view of housing projects at quote stage, with intention to connect in the next two years.
   B. Work with wider stakeholders to gain a granular picture of larger demand in West London.