

Response to NETS SQSS Review Consultation

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Q1. Please provide your comments/feedback and suggestions related to the topics raised in Section 3.1 Offshore Transmission System.

NGET agrees that Chapter 7 of the SQSS should not favour any specific connection topology and should therefore not exclude the opportunity to explore offshore network coordination within the options assessment to deliver compliant network solutions in the most economic way for consumers. NGET would be keen to understand where the ESO feel that the SQSS falls short of doing this today.

NGET support the proposed reviews of the offshore transmission criteria raised in section 3.1. We understand that these criteria are being reviewed as part of the OTNR work, with any findings applied to the Holistic Network Design (HND). The development of co-ordinated offshore transmission networks, with transmission routes that parallel the onshore system, will impact the overall performance of the Main Interconnected Transmission System (MITS). It is therefore important that the review considers the interactions with SQSS chapter 4 and that any amendments to chapter 4 that are required to maintain a consistent approach to the design of the MITS are identified and included in any change proposals. The timescales of the HND development make this the priority area for review and consideration by the SQSS panel.

Q2. Please provide your comments/feedback and suggestions related to the topics raised in Section 3.2 Demand Connection Criteria.

NGET recognise the issues raised in the consultation document and support the alignment of the SQSS and P2/7 requirements. We note that the proposal is to revise the SQSS criteria. Whilst this may be the right option, we would prefer to see a review of the differences between the documents and assessment of how best to align them, which may include changes to both documents. Timescales outlined in Section 4 of the consultation should therefore allow for synchronised updates to both documents, accounting for the further P2/7 revisions referenced in section 3.2. See response to question 10.

Q3. Please provide your comments/feedback and suggestions related to the topics raised in Section 3.3 Generation Connection Requirements.

NGET agree that there is currently a lack of clarity around how interconnectors and storage devices are considered when determining their connection requirements. We support the proposal to amend the SQSS criteria to address this issue.

The consultation document refers to Chapter 2 of the SQSS lacking consideration of outfeed risks. We agree this is one of the clarifications needed in connection requirement. We think the scope of the review should also include whether storage and interconnector connections should be assessed at a proportion of their registered capacity to reflect their operational regimes during system peak and onerous network conditions.

We feel that it is appropriate for this review of connection criteria to also consider whether changes are required to the construction planning assumptions, which define the background against which connections are designed. It is important that there is consistent treatment of existing storage devices and interconnectors and those being assessed for connection when determining the necessary works.

Q4. Please provide your comments/feedback and suggestions related to the topics raised in Section 3.4 Main Interconnected Transmission System.

NGET agree that it is important to maintain a security and quality of supply standard that is up to date to enable appropriate treatment and facilitation of connection of technology types, and to enable the development of our long-term network requirements in the context of security of supply and decarbonisation of Great Britain.

The scaling factors relating to both the security and economy criteria in chapter 4 were derived more than 10 years ago, with the intention of them being reviewed after 5 years. The review is therefore overdue and it is NGET's view that the scaling factors are no longer appropriate. We therefore support the proposal to review the scaling factors. This review of the scaling factors should include consideration of the treatment of solar generation and energy storage systems rather than reviewing these separately.

The intention of the NOA process is to give an early signal to invest in system reinforcement, based on future scenarios, when the contracted background hasn't identified the need for works to meet the SQSS requirements. By identifying works ahead of a contracted need NOA facilitates the earlier connection of generation with fewer constraints.

NOA is designed to consider reinforcements across major system boundaries and does not consider smaller boundaries which, when considered, can lead to additional schemes or modifications to NOA schemes in order to develop a robust and economic system.

Whilst we are supportive of reviewing the interaction of NOA and the SQSS we feel that it is important to recognise the role and benefits of both in providing different signals, particularly in the long term. Any review will need to consider the impact on generation connections, and their dates, of any changes.

NGET suggest that the extent to which SQSS Chapter 4 and NOA can / should be aligned is on an assessment principles basis. This is because the SQSS is a technical network compliance standard, whereas NOA is a process for establishing economic options for wider works investment, and their differing purposes should continue to be recognised when making proposals for consistency on MITS requirements.

Whilst supportive of the SQSS Chapter 4 / NOA review proposal, before commencing any activity, NGET want to seek clarification on the future of the annual NOA process in the context and interaction with the anticipated enduring coordinated offshore plan delivered through Holistic Network Design in 2022. This is to ensure any changes to the NOA process are incorporated and considered to maximise the value of the work.

NGET is supportive of a review of whether it is appropriate to modify the SQSS criteria to include established commercial services in the calculation of transmission capacity. We think that this is a separate issue to how commercial services are assessed from an economic and network resilience perspective, which we think should be the subject of a separate review.

Q5. Please provide your comments/feedback and suggestions related to the topics raised in Section 3.5 Operational Standards in England and Wales.

The proposal to relax the operational standard is based on constraint cost reduction in the short to medium term. The consultation document comments that in the longer term constraints may increase as the need for network reinforcement will decrease. We are not clear why the need to reinforce the network will decrease if the operational standards are reduced but the design standards are maintained. We would welcome clarity on this from ESO.

NGET believe that the decision to relax the operational standard in England and Wales to N-1 under normal operating conditions needs to be carefully assessed for short, medium and long term security impacts. Within that assessment, consideration of the interconnectivity of the England and Wales transmission network must be considered, and any potential for serial or cascade events that might materialise from not planning to today's standard. Significant consideration would therefore be required of prevailing system conditions and weather effects (local and national) that may increase the likelihood of system faults.

Whilst NGET recognise this proposal would align with operational Scottish Transmission standards, we would be keen to understand the details of these proposals on several fronts;

1. Clarification on the definition of events that will be considered in the relaxation of the operational standard to N-1. N-D events account for the loss of single assets such as a transmission tower, for example, that can impact two transmission circuits simultaneously. Investigation of relaxation of this standard should therefore explore all definitions and

interpretation of N-1 to ensure the consequences are fully understood and risks accepted by all stakeholders.

2. How this proposal to relax operational standards would align with other chapters of the SQSS standard related to network planning. This is to consider the long-term impacts on the robustness of the future transmission network of the N-1 operational standard proposed and ensuring investment signals are not inadvertently 'masked' when considering constraint costs for operating a network at N-1 standards, whilst planning for a more robust standard. Increased constraint costs in the network suggest that network investment might be required earlier than previously signalled by the ESO, and this proposal should not divert from collaborative investigation of options to resolve in the interest of consumers.
3. Given that the aim is to reduce short term network constraint costs, whether a derogation against the SQSS standard for the ESO to operate the network at N-1 under specific circumstances. NGET feel that operating to an N-1 standard may not be appropriate in all prevailing system conditions, and therefore we question the appropriateness of wholesale change to the standard to accommodate the cases where this might be applied.
4. The impact on loss of supply events. In the context of the future electricity network enabling the decarbonisation of Great Britain and Net Zero targets - consumers will become more reliant on electricity to decarbonise, including heating and transport energy vectors, meaning the consequences to society of loss of supply will become higher. This must be considered in addition to the economic cost of constraints when assessing the conditions in which to relax the operational standard. In addition, NGET would expect that any relaxation of operational SQSS standards provide clarity on the treatment of Energy Not Supplied events, which Transmission Owners have strong desire and incentive to limit in the interest of consumers.

Q6. Please provide your comments/feedback and suggestions related to the topics raised in Sections 3.6 Introduction of CATO.

As per responses to previous questions, NGET feel it is important not to confuse a network standard with a competitive investment process. Therefore, whilst it may be appropriate to find suitable wording that best describes asset owners, the detail of the proposals to 'expand to a significant piece of work' would need to be further understood, to what extent this Issue is also applicable to the Holistic Network Design of the offshore network, and whether this design standard is the appropriate place for such modifications. Other codes that reflect Interactions between the System Operator and Transmission Owners, such as the System Operator to Transmission Owner code (STC) might be more appropriate if further consideration of this area proposed more significant modification to define the relationship between asset owners and the ESO.

NGET suggest that any plans for modifying the SQSS to reflect CATO could consider regional differences in application of the SQSS, and where these might be aligned to apply CATO terms to a referenced 'GB Transmission System'.

An area where NGET feel attention is required is to reflect into the roles and responsibilities for network compliance assessment. The introduction of competition for asset ownership within traditionally single asset owner transmission areas through ongoing Pathfinder activities today, and the changes that may result from the Electricity Transmission Network Planning Review, may lead to misunderstanding in accountability for network compliance. Therefore, the timing of which proposals to expand SQSS modification to 'a significant piece of work' in this area should be considered in the context of the timing of further anticipated Industry change.

Q7. Please provide your comments/feedback and suggestions related to the topics raised in Sections 3.7 Governance.

NGET are open to pragmatic ways of making modifications to the SQSS to ensure that no undue delay to changes that enable delivery of collective industry and government ambitions. We also recognise that some modifications require detailed assessment and some complexity in order to ensure that changes do not undermine the very principles of this standard – assuring a secure network for electricity transport able to provide acceptable levels and quality of supply.

Q8. Which of the proposed modifications will have the most significant impact on your operations/investment plan? To what extent would that impact be?

All of the proposals have the potential to impact on NGET's operations and/or investment plans, and therefore we would be seeking involvement in all subsequent proposals to modify the SQSS standard. Of particular note to our England and Wales Onshore Transmission Network we highlight the following:

1. Reviewing Chapter 7 of SQSS – This review could ensure that the most cost-effective decision making is made in terms of offshore network investment, and therefore NGET are supportive. However, subsequent offshore transmission networks that parallel the Main Interconnected Transmission System will impact MITS performance, and therefore impact NGET onshore network reinforcement plans. This impact must therefore be fully considered in modifications to Chapter 7 and parallel amendments made to Chapter 4 where necessary to maintain a consistent approach to the design of the MITS.
2. Reviewing Chapter 3 – Demand Connection Criteria – NGET are supportive of this proposal which can help to harmonise capacity of TO/DNO investments against SQSS Chapter 3/ P2/7 criteria. Making changes to one standard (SQSS or P 2/7) without ensuring simultaneous alignment to the other risks heightening the issue raised, even if temporarily, potentially undermining NGET business plans rather than resolving the issue. Therefore NGET feel a simultaneous review of both documents to determine alignment is most appropriate.
3. Reviewing Chapter 2 – Generation Connection Requirements – Modifications impact our approach to connecting customers to our network and the subsequent enabling and wider networks that we incorporate into our business plans. For this reason, our comments in Q3, suggest that a broader review is required to fully address the topics raised.
4. Reviewing Chapter 4 - Main Interconnected Transmission System – Modifications have the potential to improve alignment of network reinforcement drivers through alignment of Chapter 4 and NOA principles, but incorporation/ alignment beyond those principles risks confusion of a Network Compliance Process and an economic wider works assessment. As some confusion in this area exists today between NOA's purpose and additional studies that TO's undertake for network compliance against SQSS, Chapter 4 modification proposals could also risk increasing this confusion, making it more challenging to justify the appropriate drivers for network investment for NGET.
5. Reviewing Chapter 5 – Operational Standards in England and Wales – Proposals to relax the operational standard in England and Wales to N-1 under normal operating conditions can assist short term network constraints, but need to be considered carefully against short, medium and long term risk, as set out in our response to Q5. This proposal has the potential to significantly impact on NGET's operational performance without full consideration of; increased risk to loss of supply events on the England and Wales network, the prevailing network conditions under which this proposal would be deemed acceptable, any cascade impact when accounting for the interconnectivity of the E&W transmission network, the definitions of N-1 events, consequences of events today and in the future, and our increased dependency in society for electricity as we move towards 2050. We therefore believe that to ensure this decision is taken appropriately, significant further assessment by ESO and NGET is required to establish the bounds of the application of this proposal.

Q9. Are there any other areas that require review and may act as a barrier for net zero in NETS SQSS?

As referenced in question 6 of this response – the introduction of CATO into the E&W transmission network leaves responsibility for network compliance assessment unclear from the perspective of transmission assets not owned by National Grid Electricity Transmission. This may not directly impact the contents of main SQSS chapters, it requires clarification to ensure that application of the standard is thorough and complete for both the near and long term requirements of the electricity transmission network.

As referenced in our response to question 5 - we anticipate the societal reliance on electricity to increase as the electricity sector collectively seeks to enable a Net Zero future for GB. NGET therefore feel that a review of the Value of Lost Load (VOLL) would be pertinent to ensure that this assessment, and therefore our design standard that it underpins, remain reflective of the role that electricity plays in functioning society, both today and in the future out to 2050.

Q10. Do you agree with the priorities and the delivery timescales described in Section 4? If not, please provide additional information that could allow us to revise the priorities.

NGET agree with the priority order of the timeline described in Section 4 of the consultation, but as outlined throughout this response, feel that there are some further considerations needed that should be Included In the respective areas, that could Impact the ESO's view of timing;

1. In NGET's view - the prioritised activity on Offshore Networks (1a- Offshore DC converters) should be extended to include the referenced SQSS Chapter 7 review of offshore coordination, given the near-term publication of the Holistic Network Design, to ensure future standards consistency with this landmark piece of Offshore network co-ordination design.
2. The proposed timescales for SQSS chapter 3 and P2/7 review may have a dependence on P2/7 parallel updates. This is to ensure that both standards are updated at the same time to ensure any 'lag' in either update creating more of the disparity this SQSS update looks to resolve. NGET have no reason to suggest timescales should be adjusted to achieve this, but recognise this increases stakeholder input potentially.
3. NGET would like ESO to further clarify and bring forward the review of connection requirement for storage and interconnectors. The review of this part of the SQSS has significant impact to allow the connection of both technology into the transmission network in a timely manner. These technologies can bring benefit to the economic and secure operation of a Net Zero transmission network with large proportion of renewable generation.
4. NGET request that timelines are cognisant and align to support key Industry activities over the 2022/2023 period, which may in turn impact the timings by which SQSS modifications are required. These include HND publication, NOA publications (mid 2022 and 2023), Electricity Transmission Network Planning Review industry evolution and subsequent actions, and annual P2/7 network compliance assessments.

This consultation is available online here: [NETS SQSS Consultation](#)

Please return responses to box.SQSS.Review@nationalgrideso.com before 5pm on 9th March 2022.