Modification proposal:	**GSR032: Implementation of the Electricity System Restoration Standard**		
Decision:	The Authority[1] approves[2] the proposed changes to the National Electricity Transmission System Security and Quality of Supply Standards (SQSS)		
Target audience:	National Grid Electricity System Operator, transmission licensees and other interested parties		
Date of publication:	5 February 2024	Implementation date:	Twenty working days after Authority decision

Background

The SQSS sets out the criteria and methodology for planning and operating the National Electricity Transmission System (NETS). The SQSS Panel is responsible for keeping the SQSS under review and submitting any proposed changes to us for a decision.

On 1 April 2021, the Department for Business, Energy and Industrial Strategy, now the Department of Energy Security and Net Zero, released a policy statement introducing the Electricity System Restoration Standard (ESRS).[3] The ESRS requires the System Operator to be capable of regional restoration, restoring 60% of Demand on the Transmission System in all regions within 24 hours, and 100% within 5 days. It also sets out that the ESRS requirements must be met by 31 December 2026. In August 2021, we issued our decision on licence modifications to facilitate the ESRS.[4]

DESNZ introduced the ESRS as Great Britian's (GB) dependence on electricity is vast, therefore if electricity supply is lost it will severely impact national infrastructure networks, public services and economic activities. The DESNZ policy statement[5] noted that a nationwide

[1] References to the "Authority", "Ofgem", "we" and "our" are used interchangeably in this document. The Authority refers to GEMA, the Gas and Electricity Markets Authority. The Office of Gas and Electricity Markets (Ofgem) supports GEMA in its day to day work. This decision is made by or on behalf of GEMA.
[2] This document is notice of the reasons for this decision as required by section 49A of the Electricity Act 1989.
[3] https://www.gov.uk/government/publications/introducing-a-new-electricity-system-restoration-standard/introducing-a-new-electricity-system-restoration-standard-policy-statement
[4] https://www.ofgem.gov.uk/publications/decision-licence-modifications-facilitate-introduction-electricity-system-restoration-standard
[5] https://www.gov.uk/government/publications/introducing-a-new-electricity-system-restoration-standard/introducing-a-new-electricity-system-restoration-standard-policy-statement

electricity failure has never occurred in GB, however similar scale events have occurred internationally, thus highlighting that whilst unlikely there is a credible risk for our energy network. As a result, DESNZ noted that we must adequately prepare for the worst-case scenario and as such introduced the ESRS.

The modification proposal

GSR032 (the Proposal) is proposed by National Grid Electricity System Operator (NGESO) and was initiated via the ESRS subgroups which identified potential changes to the SQSS in implementing ESRS. These findings were presented to the SQSS Panel and developed by a workgroup, which convened six times.

The Proposal seeks to introduce Appendix I 'System Restoration Requirements' to the SQSS. At a high level, Appendix I requires transmission systems to be designed to:

1. facilitate participation in a restoration plan,
2. permit power stations to subsequently synchronise (to a power island formed by a restoration plan), and,
3. to prevent system collapse during restoration.

Existing Offshore Transmission Systems are exempt from the proposed requirements, as they have always been exempt from participation in system restoration[6]. Further, offshore transmission systems whose design contracts for those assets had been concluded on or after 12 months from the publication of this decision, are also exempt from these requirements.

Industry Consultation

A workgroup consultation ran from 31 May 2023 to 20 June 2023, receiving two responses. One from the proposer in support of the Proposal, and one from a Transmission Owner (TO) not supporting the Proposal's implementation. We note that the TO respondent broadly considered the modification did not provide sufficient clarity for system design, however ultimately voted in favour of the Proposal in their SQSS Panel vote on the Proposal.

A Code Administrator consultation ran 31 July 2023 to 29 August 2023, receiving one response in support of the Proposal from the proposer.

SQSS Panel recommendation

[6] As outlined in the System Operator – Transmission Owner Code (STC) Procedural (STCP) document STCP 06-1 System Restoration; https://www2.nationalgrideso.com/document/40906/download

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The SQSS Panel considered the Proposal and consultation responses at the Panel meeting on 20 September 2023, and made their recommendation vote; there were six votes for the Proposal and one vote against. Overall, the SQSS Panel recommend by majority that GSR032 be implemented, considering by majority that it better facilitates SQSS objectives (i)[7] and (ii)[8], and has a neutral impact on the other objectives.

We note that a TO SQSS Panel member representative voted against the Proposal, considering it does not better facilitate SQSS objective (i) and (ii). This is discussed below.

Decision notice

This letter sets out the Authority's decision the proposed changes to the SQSS and the reasons for that decision. We have concluded that:

- implementation of the modification proposal will better facilitate the achievement of objective (i) and (ii) of the SQSS[9]; and
- approving the modification is consistent with our principal objective and statutory duties.[10]

Reasons for our decision

We consider the SQSS modifications proposed in GSR032 better facilitate SQSS objective (i), (ii), (iii) and (iv).

(i) facilitate the planning, development and maintenance of an efficient, coordinated and economical system of electricity transmission, and the operation of that system in an efficient, economic and coordinated manner;

We note that all but one Panel members considered the Proposal to better facilitate this objective. We consider this Proposal provides the high level requirements to facilitate successful implementation of the ESRS, whilst remaining sufficiently flexible to allow an efficient design process, and give consideration to a wider restoration strategy. We therefore

[7] SQSS Objective (i); facilitate the planning, development and maintenance of an efficient, coordinated and economical system of electricity transmission, and the operation of that system in an efficient, economic and coordinated manner.
[8] SQSS Objective (ii); ensure an appropriate level of security and quality of supply and safe operation of the National Electricity Transmission System.
[9] The NETS SQSS Industry Governance Framework: https://www.nationalgrideso.com/sites/eso/files/documents/NETS%20SQSS%20Industry%20Governance%20Framework%20v1.0%20%2830-03-12%29.pdf
[10] The Authority's statutory duties are wider than matters which NGET must take into consideration and are detailed mainly in the Electricity Act 1989 as amended.

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agree with the majority of Panel members, and consider the Proposal to better facilitate this objective.

We note that a TO Panel representative considered the Proposal not to better facilitate this objective, noting in particular that "The proposal of the modification provides a high-level view on the subject of system restoration but it lacks quantitative criteria and methodology for designing and operating of transmission networks". Whilst we agree that the proposed changes are high-level, we note that the workgroup considered more prescriptive changes, ultimately opting in favour of the high-level approach to provide an element of flexibility and judgement within the network design process. We therefore disagree with the TOs view that the requirements should be brought out explicitly in the SQSS. We note that this TO Panel representative acknowledged that the network design details were broadly covered within other ESRS related code modification proposals[11]. However, we acknowledge that further work may be required to coordinate investments. This is discussed further below.

We note that due to the nature of restoration contracting and system restoration, providers of restoration services and subsequent services to expand power islands may vary over time or restoration event. Therefore, in theory, all sections of the Transmission System may need to be designed to participate in all phases of restoration to best ensure that the requirements of the ESRS can be met on an enduring basis. Whilst this may be a beneficial long term strategy, we do not consider this to be practical nor economical to achieve by 31 December 2026, the date that ESRS must be complied with, nor do we consider the Proposal requires this.

This Proposal should be considered with respect to a wider restoration strategy, which is the responsibility of NGESO. We expect NGESO to engage with Transmission Licensees on a wider restoration strategy and therefore the parameters against which various sections or regions of the NETS will need to be designed.[12] In doing so, we note that supporting guidance, criteria or methodology, on which to design networks may be developed. We do not consider that this Proposal prohibits this, and consider NGESO to have overall responsibility for ensuring coordinated investment.

We also note that NETS investment related to ESRS will need to be integrated into, or completed alongside, business as usual investment. We therefore consider that NGESO must be cognisant of TO's ability to economically undertake necessary investments, which may therefore influence its wider restoration strategy, and vice versa.

[11] In particular Grid Code modification GC0156 and System Operator Transmission Owner Code (STC) modification CM089/091 (and associated STC Procedural modification PM0128/0132).
[12] We note that we sought clarification from each TO with regards to views stated in their consultation responses or Panel voting statements with respect to this Proposal, and related System Operator Transmission Owner Code (STC) modification proposal CM089/091. During these clarifications, it was confirmed by each TO that NGESO had begun discussions with respect to a wider system restoration strategy. We expect these discussions to continue as needed.

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Overall, as mentioned above, we consider this Proposal provides the high level requirements to facilitate successful implementation of the ESRS whilst remaining sufficiently flexible to allow for an efficient design process with respect to local network attributes and wider restoration strategy, thereby facilitating efficient implementation. Acknowledging that further work may be required, in particular to ensure coordinated investment with respect to a wider restoration strategy, we consider that, on balance, this Proposal has a positive impact on this objective[13].

(ii) ensure an appropriate level of security and quality of supply and safe operation of the National Electricity Transmission System;

We consider that the Proposal lays the foundations to ensure that System Restoration (in accordance with the ESRS) is considered in network design, thereby better ensuring an appropriate level of security in response to a total or partial system shutdown. We therefore consider the Proposal to have a positive impact on this objective.

We note that a TO Panel representative considered the Proposal not to better facilitate this objective, for broadly the same reasons as outlined above, against objective (i). Our views regarding this are set out above. We further note that the majority of the Panel considered the Proposal to better facilitate this objective.

(iii) facilitate effective competition in the generation and supply of electricity, and (so far as consistent therewith) facilitating such competition in the distribution of electricity;

We note that all but two Panel members considered the Proposal to have a neutral impact on this objective.

A Panel member representing generators considered the Proposal to have a negative impact on this objective as future developers would need to build and design Offshore Transmission Owner (OFTO) assets to comply with the proposed requirements, but have no mechanism for the recovery of the associated costs. We disagree with this view, as legitimate costs associated with OFTO compliance with the proposed requirements will be passed through to the OFTO via the OFTO tenders.

[13] Noting that this Proposal should be read and considered alongside other relevant requirements within the Grid Code, STC and STCP modifications proposed alongside this Proposal.

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A Panel member representing NGESO considered the Proposal to have a positive impact on this objective by requiring future Offshore Transmission Systems to consider restoration as part of their design criteria, especially in view of the expected growth in Offshore Generation.

We note that existing Offshore Transmission Systems were designed in parallel with the Offshore Wind Farms they connect. To date, no Offshore Wind Farm has been a nominated Black Start station (now Restoration Contractor), due to lack of technical capability, hence no Offshore Transmission Systems were designed for restoration. Future Offshore Wind Farms are likely to be capable of participating in restoration, it is therefore necessary for future Offshore Transmission System's to also be capable of participating in restoration. We therefore consider that the Proposal will better facilitate competition in future restoration tenders for Restoration Contractors, and hence have a positive impact on this objective.

(iv) facilitate electricity Transmission Licensees to comply with any relevant obligations under EU law;

We note that a TO Panel representative considered the Proposal to not better facilitate this objective when voting on this Proposal, however subsequently confirmed that they do not consider the Proposal to have a detrimental impact on this objective. We also note that two Panel members considered the proposal to better facilitate this objective, whilst the rest considered it to have a neutral impact on this objective.

As set out above, we consider that the Proposal lays the foundations to ensure that System Restoration (in accordance with the ESRS) is considered in network design, thereby better ensuring an appropriate level of security in response to a total or partial system shutdown. We note that the suite of code modifications proposed to comply with the ESRS builds on previous modifications[14] implemented to comply with Commission Regulation (EU) 2017/2196 establishing a network code on electricity emergency and restoration.[15] As such, we consider that the Proposal also better facilitates obligations under Commission Regulation (EU) 2017/2196, and therefore has a positive impact on this objective.

Implementation

In this letter we have set out our decision to approve the changes to the NETS SQSS proposed in GSR032. NGESO intend to publish a draft version of the SQSS on their website with a cover

[14] Grid Code modifications GC0125, GC0127 and GC0128; our decision on these modifications can be viewed here; https://www.ofgem.gov.uk/publications/gc0125-gc127-and-gc128-authority-decision-letter. Grid Code modification GC0148; our decision on GC0148 can be viewed here; https://www.ofgem.gov.uk/publications/authority-decision-modification-gc0148-implementation-eu-emergency-and-restoration-code-phase-ii

[15] Commission Regulation (EU) 2017/2196 can be viewed here; https://www.legislation.gov.uk/eur/2017/2196/contents

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note explaining the changes within it. An updated version of the SQSS will incorporate these changes in due course. When an updated version is formalised, the Authority will hold a licence consultation to reflect the updated version of the SQSS in the Electricity Transmission Licence.

Decision notice

The Authority hereby directs that modification proposal GSR032 be made.

Gurpal Singh
Principal Engineer and Professions Lead
Signed for and on behalf of the Authority

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