

National Electricity Transmission System Security and Quality of Supply Standard (“SQSS”) GSR034 – Review of Loss of Power Infeed Risk for Offshore DC Converters

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 Electricity System Operator (NESO), the SQSS Panel, SQSS users, and other interested parties
Date of publication:	3 March 2026
Implementation date:	13 March 2026

Background

The National Electricity Transmission System Security and Quality of Supply Standard (SQSS) currently places a limit on the maximum permitted loss of power infeed from any single offshore Direct Current (DC) converter, restricting it to the normal loss of infeed risk of 1320MW. This requirement exists to protect consumers from frequency disturbances where system frequency could fall below 49.5Hz following a major infeed loss event.

However, as highlighted in both the Proposal³ and the Final Modification Report (FMR)⁴, this restriction has become increasingly misaligned with contemporary offshore transmission design needs and may unintentionally drive inefficient network development.

¹ References to the “Authority”, “Ofgem”, “us”, “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 [GSR034 Proposal Form \(1\).pdf](#)

⁴ [GSR034 Final Modification Report 0.pdf](#)

Under the present arrangements, large offshore wind farms, such as those with capacities around 1800MW must be split across multiple DC connections to remain within the 1320MW limit. This can lead to additional offshore cable circuits and landfall points, resulting in higher capital expenditure, unnecessary environmental disturbance, and delays to deployment.

The GSR034 Workgroup analysis demonstrates the current 1320MW limit is increasingly outdated, by requiring additional avoidable offshore infrastructure, hindering the delivery of an optimal network design necessary for decarbonisation objectives. GSR034⁵ was raised to address this identified defect by reassessing the permitted infeed loss level for single offshore DC converter connection.

The modification proposal

GSR034 (the Proposal) was raised by NESO (the Proposer) to review whether the existing SQSS limit on the maximum loss of power infeed from a single offshore DC converter, currently set at the normal infeed loss limit of 1320MW remains appropriate under modern offshore transmission design. The Proposer identified that this limit restricts the use of larger HVDC converter capacities, which in turn forces offshore wind farms to split their connections across multiple circuits, increasing infrastructure requirements and costs.

The Proposal seeks to replace the normal infeed loss limit with the infrequent infeed loss risk for offshore DC converters by modifying SQSS clauses 7.7.2 and 7.12.2. Under this revised approach, single converter capacities above 1320MW (e.g., up to 1800 MW) could be accommodated, enabling more efficient offshore connection designs.

The Proposer considers GSR034 will have a positive impact on Applicable SQSS Objective⁶ (a)⁷ which will promote system efficiency and coordination, through enabling more optimised

⁵ [GSR034 - Review of Loss of Power Infeed Risk for Offshore DC Converter | National Energy System Operator](#)

⁶ The Applicable SQSS Objectives are set out in Appendix J, paragraph J.3.1 of [NETS Security and Quality of Supply Standards v2.10_0.pdf](#)

⁷ Applicable SQSS Objective (a) 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

offshore network designs. The environmental impact will be reduced by decreasing the number of offshore cables and landfall points, which will facilitate a reduction in consumer costs and help to enable delivery of the Holistic Network Design (HND).

Code Administrator Consultation

A Code Administrator Consultation (CAC) on GSR034 was issued on 05 November 2025 and closed on 19 November 2025. The consultation received four non-confidential responses and no confidential responses.

All respondents expressed a broad support for the Proposal and agreed that the GSR034 Original Proposal better facilitates Applicable SQSS Objective (a) compared to the existing baseline. One respondent additionally considered that Objective (c)⁸ was also better facilitated by the Proposal. Stakeholders recognised that enabling larger offshore DC converter capacities would support more efficient offshore network design, reduce consumer costs, and enhance system planning effectiveness.

Respondents also noted that while relaxing the loss-of-infeed limit may increase the number of frequency excursions, they agreed that this impact is manageable and can be mitigated through the procurement of additional frequency response services where needed. Two respondents emphasised that these operational considerations were outweighed by the wider economic and environmental benefits the modification would unlock.

SQSS Panel⁹ recommendation

The SQSS Panel considered the FMR at its meeting on 05 December 2025. The Panel considered that GSR034 would better facilitate the Applicable SQSS Objective (a) and the Panel therefore recommended its approval.

⁸ Applicable SQSS Objective (c) facilitate effective competition in the generation and supply of electricity, and (so far as consistent therewith) facilitating such competition in the distribution of electricity

⁹ The SQSS Panel is established and constituted from time to time pursuant to and in accordance with Appendix J, paragraph J.2.5 of the [NETS Security and Quality of Supply Standards v2.10 0.pdf](#) 2025

For Applicable SQSS Objectives (b)¹⁰, (c) and (d)¹¹, all Panel members assessed the modification as neutral. Members did acknowledge however, that although a small increase in the number of frequency excursions was possible, the Panel agreed that this impact is manageable through existing frequency response mechanisms. Furthermore, the benefits of GSR034 although potentially increasing the number of frequency excursions is outweighed by the wider system and consumer benefits. No Panel Member identified any detrimental impact against any of the Applicable SQSS Objectives.

Our decision

We have considered the issues raised by the Proposal and the FMR. We have considered and taken account of the responses of the SQSS Parties included in the FMR. We have concluded that:

- implementation of the modification proposal will better facilitate the achievement of the Applicable SQSS Objectives (a) and has a neutral impact on the other applicable objectives
- directing that the modification be made is consistent with our principal objective and statutory duties¹²

Reasons for our decision

We consider this modification proposal will better facilitate the Applicable SQSS Objective (a) and has a neutral impact on the other applicable objectives (b), (c) and (d).

(a) *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*

¹⁰ Applicable SQSS Objective (b) ensure an appropriate level of security and quality of supply and safe operation of the National Electricity Transmission System

¹¹ Applicable SQSS Objective (d) facilitate Licensees to comply with any relevant obligations under Assimilated law.

¹² The Authority's statutory duties are wider than matters that the Panel must take into consideration and are detailed mainly in the Electricity Act 1989 as amended.

Implementing GSR034 will better facilitate Applicable SQSS Objective (a) by enabling more efficient and economical offshore network design, reducing unnecessary infrastructure and supporting the delivery of the HND.

We do however note the Workgroup's assessment that while increasing the maximum loss of infeed risk for offshore DC converters may lead to a short term increase in frequency response requirements, the incremental cost of managing this risk is capped at approximately £12 million per year, based on a £3.7/MWh Dynamic Containment cost assumption. This cost arises from ensuring system frequency remains above key thresholds in the event of a potential 1800MW loss of offshore wind generation.

This potential additional requirement in our view is transitional rather than enduring. The FMR maintains that this incremental frequency response need will become negligible once the new 1800MW nuclear units enter service (expected March 2029). After which the system will need to procure similar volumes of response as business as usual to cover the nuclear infeed risk. We consider that the enduring benefits of this modification proposal outweigh the short term increase in frequency response costs and therefore consider it to better facilitate this Applicable SQSS Objective.

Decision notice

In accordance with Standard Condition E7 of Annex E - Electricity System Operator Licence Conditions¹³ and the National Electricity Transmission System Security and Quality of Supply Standard in force at the time, the Authority hereby directs that modification proposal GSR034: Review of Loss of Power Infeed Risk for Offshore DC Converters be made.

Shilen Shah

Head of Strategic Planning, Codes and Standards – Engineering and Technology

Signed on behalf of the Authority and authorised for that purpose

¹³ [Annex E - Electricity System Operator Licence Conditions](#)