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SQSS Modification Proposal Form

GSR038: Single Transformer Offshore AC Substations

Overview: This modification is proposed to assess the restriction in Clause 7.7.1.1 that effectively requires two offshore Alternating Current (AC) transformers for grid entry point capacities of 90 MW or more.

Modification process & timetable

1	Proposal Form 24 February 2026
2	Code Administrator Consultation 31 March 2026 – 23 April 2026
3	Draft Final Modification Report 12 May 2026
4	Final Modification Report 04 June 2026
5	Implementation 10 Business Days after Authority Decision

Status summary: The Proposer has raised a modification and is seeking a decision from the Panel on the governance route to be taken.

This modification is expected to have a: High impact on Offshore Transmission Owners (OFTOs) and Offshore Generators and a **Medium impact** on the National Energy System Operator (NESO)

Proposer's recommendation of governance route	Standard Governance modification to proceed to Code Administrator Consultation	
Who can I talk to about the change?	Proposer: Slawomir Marek Kurek slawomir.kurek@vargronn.com	Code Administrator Contact: box.SQSS@neso.energy

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What is the issue?

The current National Electricity Transmission System (NETS) Security and Quality of Supply Standard (SQSS) requires Offshore Alternating Current (AC) substations with a grid entry point of 90 Megawatt (MW) or more to limit the loss of infeed after a transformer outage to 50% of capacity. This effectively forces two-transformer offshore designs, even where a single-transformer configuration would remain within the system's normal infeed loss risk. As a result, standard, lower-cost offshore substation designs cannot be deployed in Great Britain (GB).

Why change?

Requiring two offshore transformers forces larger and heavier platforms, increasing fabrication effort, steel tonnage, installation vessel requirements and long-term maintenance. These effects raise project cost, embodied carbon and Levelised Cost Of Electricity (LCOE), and can undermine project viability. Offshore transformer reliability is high, and the loss of a single transformer remains well within the system's normal infeed loss risk. The 50% rule therefore, imposes unnecessary redundancy that does not improve system security. Removing it enables standard, lower-cost offshore designs, reduces offshore working hours and Health and Safety Executive (HSE) exposure, and aligns with the principles already supported through SQSS modification [GSR034](#).

Further details are provided in the supporting paper (**Annex 01**).

What is the Proposer's solution?

Amend NETS SQSS Section 7.7.1.1 to remove the requirement that the loss of a single offshore AC transformer must not exceed 50% of the offshore grid entry point capacity, where the resulting infeed loss remains within the normal infeed loss risk.

Legal text

Proposed legal text (Clause 7.7.1.1):

"in the case of offshore power park module only connections, following a planned outage or a fault outage of a single AC offshore transformer circuit on the offshore platform, the loss of power infeed shall not exceed the full normal infeed loss risk."
(**Annex 02**).

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What is the impact of this change?

Proposer's assessment against SQSS Objectives	
Relevant Objective	Identified impact
(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;	Positive The proposed change will facilitate better optimisation of the offshore network designs.
(b) ensure an appropriate level of security and quality of supply and safe operation of the National Electricity Transmission System;	Neutral System security is unchanged, as the loss of a single offshore transformer remains within the normal infeed loss risk
(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; and	Neutral
(d) facilitate Licensees to comply with any relevant obligations under Assimilated law	Neutral

Proposer's assessment of the impact of the modification on the stakeholder / consumer benefit categories	
Stakeholder / consumer benefit categories	Identified impact
Improved safety and reliability of the system	Neutral
Lower bills than would otherwise be the case	Positive Removing unnecessary offshore transformer redundancy reduces platform cost and lowers LCOE, ultimately reducing overall system costs for consumers.

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Benefits for society as a whole	Positive Reducing unnecessary offshore infrastructure lowers embodied carbon and supports the efficient delivery of low-carbon electricity, contributing to progress towards Net Zero.
Reduced environmental damage	Positive Reducing unnecessary offshore infrastructure lowers embodied carbon and minimizes the environmental impact of offshore construction.
Improved quality of service	Neutral

When will this change take place?

Implementation date

10 Business Days after Authority Decision.

Date decision required by

Q3 2026

Implementation approach

Not applicable. This modification does not require any changes to NESO systems or operational processes.

Proposer's justification for governance route

Governance route: Standard Governance modification to proceed to Code Administrator Consultation in accordance with clause J.5.2.2.4 of the NETS SQSS.

Interactions

☐ Grid Code ☐ BSC ☐ STC ☐ CUSC
☐ European ☐ Other ☐ Other
 Network Codes modifications

No interactions.

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Acronyms, key terms and reference material

Acronym / key term	Meaning
BSC	Balancing and Settlement Code
CIGRE	International Council on Large Electric Systems
CUSC	Connection and Use of System Code
LCOE	Levelized Cost of Energy
STC	System Operator Transmission Owner Code
SQSS	Security and Quality of Supply Standards

Reference material

- [GSR034 - Review of Loss of Power Infeed Risk for Offshore DC Converter](#)
- International Council on Large Electric Systems (CIGRE) TB939: [Analysis of AC transformer reliability - Technical Brochures | eCIGRE](#)

Annexes

Annex	Information
Annex 01	GSR038 - Supporting Rationale
Annex 02	GSR038 - Legal Text