

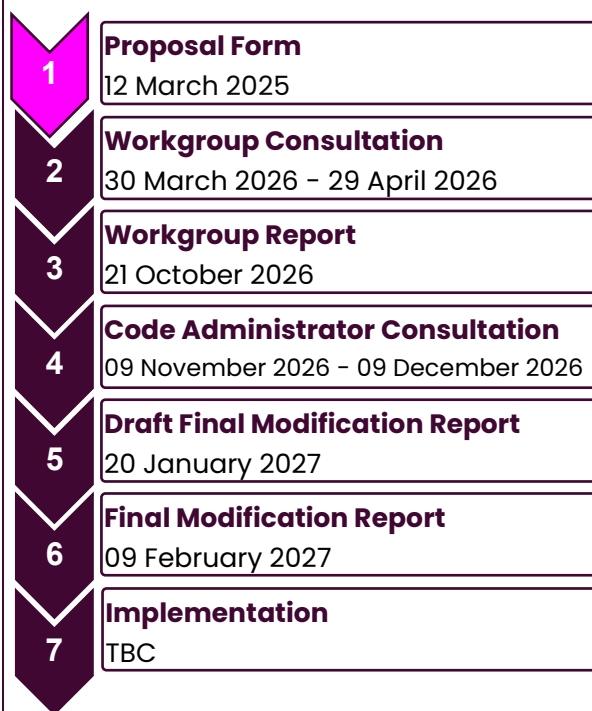
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Grid Code Modification Proposal Form

GC0178: Temporary Overvoltage - Specification of Limits and Clarification of Obligations

Overview: This modification aims to specify limits on temporary overvoltage, clarify the obligations applicable during such events, and address any related issues.

Modification process & timetable



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

Generators, Transmission System Owners, Interconnectors, Transmission Owners

Modification drivers: New Technologies, System Operability

Proposer's recommendation of governance route

Standard Governance modification with assessment by a Workgroup

Who can I talk to about the change?

Proposer: Bieshoy Awad
bieshoy.awad@nationalenergyso.com

Code Administrator Contact:
grid.code@nationalenergyso.com

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What is the defect you are trying to resolve?

The Grid Code does not include specific limits on temporary overvoltage. It also does not explicitly specify requirements on how generation would respond to a temporary overvoltage, which led to some Generators assuming that such requirements do not exist.

Why change?

The lack of specificity imposes several risks to different parties. For Generators, that could represent a moving goal post that requires significant investment to be made in their plant if the changes on the network push maximum temporary overvoltage at the connection site significantly beyond the plant capability. It could also lead to them being deemed non-compliant if, for example, they fail to ride through the temporary overvoltage subsequent to a fault. For consumers, an unacceptable performance from generation plant during temporary overvoltage may reduce their security of supply. For NESO, a widespread non-compliance with the fault ride through requirements may result in NESO having to manage this non-compliance by procuring services beyond what is economic, coordinated, and efficient.

What is the Proposer’s solution?

Introduce a limit, both in terms of magnitude and duration, on temporary overvoltage following secured events. This limit would need to be maintained by TOs in design timescales and by NESO in operational timescales. Clarify the requirements on how plant need to perform during temporary overvoltage in terms of reactive support, ride through, and otherwise. Ensure the requirements apply to all generation plant, including what is already connected, but provide a mechanism to minimise, or delay, the impact on existing generation fleet. Consider how compliance with temporary overvoltage requirements applicable to generation plant would be assessed. The modification will affect the Connection Conditions, the European Connection Conditions, and potentially, the Compliance Process.

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What is in and out of scope?

The modification is related to the issue of defining the overvoltage limits applicable for operation, dynamic response to events, and ride through and the associated requirements that Generators need to comply with. Issues like insulation coordination are out of scope.

Draft legal text

Draft legal text has been provided in Annex 1.

What is the impact of this change?

Generators and Interconnectors will have clarity on the limits to the magnitude and duration of overvoltage their plant are expected to experience. Generators and Interconnectors will be required to ensure their plant not to cause these limits to be violated.

NESO will be required to ensure the National Electricity Transmission System is operated in a manner that does not violate the overvoltage limits.

TOs will be required to ensure the National Electricity Transmission System is designed in a manner that does not violate the overvoltage limits and to ensure that NESO has the capability to contain overvoltage within these limits at all times.

Proposer's assessment against Grid Code Objectives	
Relevant Objective	Identified impact
(a) To permit the development, maintenance and operation of an efficient, coordinated and economical system for the transmission of electricity	<p>Positive</p> <p>The Proposal ensures that the responsibility of management of risks associated with temporary overvoltage is shared appropriately between Users, TOs, and NESO</p>

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<p>(b) Facilitating effective competition in the generation and supply of electricity (and without limiting the foregoing, to facilitate the national electricity transmission system being made available to persons authorised to supply or generate electricity on terms which neither prevent nor restrict competition in the supply or generation of electricity);</p>	<p>Neutral</p> <p>Adding a cap on the magnitude and duration of an overvoltage User's Plant are going to be exposed to reduces their exposure to unexpected modifications to their Plant to cope with changes on the National Electricity Transmission System.</p>
<p>(c) Subject to sub-paragraphs E3.2(b)(i) and E3.2(b)(ii), to promote the security and efficiency of the electricity generation, transmission and distribution systems in the national electricity transmission system operator area taken as a whole;</p>	<p>Positive</p> <p>Clarity on operational requirements during overvoltage reduces the likelihood that plant would be tripped/damaged during such an Event. This improves the security and the efficiency of electricity generation and transmission.</p>
<p>(d) To efficiently discharge the obligations imposed upon the licensee by this license and to comply with the Electricity Regulation and any relevant legally binding decisions of the European Commission and/or the Agency; and</p>	<p>Neutral</p> <p>Not applicable</p>
<p>(e) To promote efficiency in the implementation and administration of the Grid Code arrangements</p>	<p>Neutral</p> <p>Not applicable</p>

The proposal will provide clarity on the requirements that generation plants need to be designed to.

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The reduced risk of failure to ride through temporary overvoltage will improve the system operability and ensure consumers are not exposed to significant balancing services costs.

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	Positive Clarity on operational requirements during overvoltage reduces the likelihood that plant would be tripped/damaged during such an event. This improves the security and the efficiency of electricity generation and transmission.
Lower bills than would otherwise be the case	Positive The limits would be set in a manner to ensure maximum consumer benefit. The proposal will ensure NESO does not incur significant balancing costs as a result of plant inadvertent non-compliance .
Benefits for society as a whole	Neutral Not applicable
Reduced environmental damage	Positive The proposal reduces the operability risks arising from the displacement of synchronous generation by inverter based resources. This allows better integration of green technologies.
Improved quality of service	Neutral Not applicable

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When will this change take place?

Implementation date:

10 Business Days after Decision

Proposer’s justification of Implementation date:

Provided that the network and generation plant are already compliant with the requirements specified, a swift implementation of the proposal will provide much needed clarity.

Date decision required by

Mid 2027

Implementation approach

Will be dependent on the final proposal once developed by the Workgroup.

Proposer’s justification for governance route

Governance route: Standard Governance modification with assessment by a Workgroup

The proposal needs significant input from industry and therefore needs to be developed by a Workgroup.

Interactions

- | | | | |
|--|--|--|--------------------------------|
| <input type="checkbox"/> CUSC | <input type="checkbox"/> BSC | <input checked="" type="checkbox"/> STC | <input type="checkbox"/> SQSS |
| <input type="checkbox"/> European
Network Codes | <input type="checkbox"/> EBR Article 18
T&Cs ¹ | <input checked="" type="checkbox"/> Other
modifications | <input type="checkbox"/> Other |

This proposal complements the proposals developed under [GC0155](#). There will be a subsequent STC modification raised to bring Section K in line with the Grid Code.

Industry engagement and feedback

Discussions have been ongoing for several months including in the [GC0155](#) Workgroup. Engagement has also been had with Generators on site specific issues, and with OEMs.

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Acronyms, key terms and reference material

Acronym / key term	Meaning
BSC	Balancing and Settlement Code
CUSC	Connection and Use of System Code
EBR	Electricity Balancing Regulation
GC	Grid Code
STC	System Operator Transmission Owner Code
SQSS	Security and Quality of Supply Standards
T&Cs	Terms and Conditions
TOV	Temporary Overvoltage
OEM	Original Equipment Manufacturer

Annexes

Annex	Information
Annex 1	GC0178 Draft Legal Text