

# Stage 01: Modification Proposal

## Grid Code

# GC0110: LFSM-O compliance requirements for Type As and B PGMs

**Purpose of Modification:** To update the Grid Code and G99 with revised text for limited frequency sensitive mode- overfrequency compliance so that manufacturers have clear pass/fail criteria for limited frequency sensitive mode-overfrequency compliance.

### The Proposer recommends that this modification should be:

- assessed by a joint GCRP/DCRP Workgroup

This modification was raised **18 04 2018** and will be presented by the Proposer to the Panel on **26 08 2018**. The Panel will consider the Proposer's recommendation and determine the appropriate route.



**High Impact:** Manufacturers, installers and owners of Type A and B power generating modules connected to both distribution and transmission systems



**Medium Impact:** DNOs



**Low Impact:** None

What stage is this document at?

01	Modification Proposal
02	Workgroup Report
03	Code Admin Consultation
04	Draft Self-Governance Report
05	Final self-Governance Report

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### Any Questions?

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## Timetable

**The Code Administrator will recommend a timetable to the GCRP on the 26 April 2018 for approval.**

Workgroup Meeting 1

Workgroup Report presented to Panel

Code Administration Consultation Report issued to the Industry

Draft Modification Self-Governance Report presented to Panel/Industry

Grid Code Panel Determination Vote

Final Modification Self-Governance Report published

Appeal window opens/closes

Decision implemented in Grid Code

### *Defect*

The Grid Code legal text proposed to be implemented in GC0102 (subject to Authority decision) introduces new specific limited frequency sensitive mode - overfrequency requirements for all Type A and B generators. This is a new requirement for all distribution connected generation, and also a new limitation of frequency sensitive mode requirements for transmission connected smaller (ie Type A and B) generation.

### *What*

The specification and testing requirements for Type A and B limited frequency sensitive mode- overfrequency need to be clarified – and this clarification fed into G99 which also need to be updated to reflect this.

### *Why*

Manufacturers of Type A and B power generating modules (PGM) need clarity on the limited frequency sensitive mode- overfrequency requirements so that they can ensure compliance at the point of manufacture. For reciprocating gas engines in the Type B size range the performance requirements are onerous. Although not a mass market product, these are nevertheless turned out in significant numbers and it is not appropriate or efficient to have a dialogue in every instance when a Type B PGM is commissioned.

### *How*

The Grid Code and EREC G99 will need to be modified post clarification of the compliance requirements.

## 2 Governance

### *Joint work with the DCRP*

As many of the PGMs affected by these requirements will be connected to the Distribution Network it is appropriate that this is a joint Workgroup, carrying on the approach taken in drafting EREC G99, whereby it is National Grid's responsibility under the RfG to specify these parameters, but their implementation needs to be jointly agreed between transmission and distribution.

Although this is unlikely to be a contentious modification as the intent is only to clarify the exact requirements, it is expected that there will be high degree of interest in ensuring that the proposed revised text is both clear and does not inadvertently impose new requirements on Users.

### **Requested Next Steps**

This modification should:

- Progress as Self-Governance
- be assessed quickly by a Workgroup with a view to an imminent Code Administrator consultation ahead of Panel Determination

**Self-Governance - This modification** is unlikely to discriminate between different classes of Grid Code Parties and is unlikely to have a material effect on:

- Existing or future electricity customers;*
- Competition in the generation, distribution, or supply of electricity or any commercial activities connected with the generation, distribution or supply of electricity,*
- The operation of the National Electricity Transmission System*
- Matters relating to sustainable development, safety or security of supply, or the management of market or network emergencies*
- The Grid Code's governance procedures or the Grid Code's modification procedures*

## 3 Why Change?

In the development of GC0102 and the associated EREC G99 documentation, the existing Grid Code requirements were identified as being RfG compliant and appropriate to retain in GB. However the application of limited frequency sensitive mode- overfrequency to distribution connected generation as small as Type B is completely new. Also, as well as being new, it has not been the practice that limited frequency sensitive mode- overfrequency is provided in isolation from frequency sensitive mode. Hence the historic approach to assessing limited frequency sensitive mode- overfrequency has been as part of a wider assessment of frequency sensitive mode.

The current Grid Code drafting includes phrases such as "as much as possible" and only indicative performance requirements. The proposer accepts that such drafting prompts appropriate discussions regarding performance with Generators on a case by case basis for Large Power Stations. However it is not appropriate for manufacturers making many-off common products such as Type B power

generating modules, where a prescriptive pass/fail criterion for compliance is required.

## 4 Code Specific Matters

- Familiarity with current Grid Code requirement.
- Understanding of the practical issues associated with frequency following performance of generating modules, particularly synchronous, in the Type B size range.
- Familiarity with the performance characteristics of smaller asynchronous generating units.

### *Reference Documents*

GC0102 Grid Code modification  
EREC G99

## 5 Solution

The requirements for Types A & B generators (as specified in ECC 6.3.7.1, in EREC G99 A.7.1.3, A7.2.4, B.5.6, B.6.6) will need to be updated following agreement in the working group as to the precise requirements that need to be complied with.

Draft text for ECC 6.3.7.1 and G99 is included with this modification proposal.

## 6 Impacts and Other Considerations

The key documents affected by this modification proposal are the Grid Code and EREC G99. There are no other effects on other industry documents.

*Does this modification impact a Significant Code Review (SCR) or other significant industry change projects, if so, how?*

No

### *Consumer Impacts*

There are no consumer impacts.

## 7 Relevant Objectives

Impact of the modification on the Relevant Objectives:	
Grid Code Relevant Objectives	Identified impact
To permit the development, maintenance and operation of an efficient, coordinated and economical system for the transmission of electricity	Positive
To facilitate 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)	Positive
Subject to sub-paragraphs (i) and (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	Neutral
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	Positive
	Neutral
Distribution Code Relevant Objectives	
Permit the development, maintenance, and operation of an efficient, coordinated and economical System for the distribution of electricity.	Neutral
Facilitate competition in the generation and supply of electricity.	Neutral
Efficiently discharge the obligations imposed upon DNOs by the Distribution Licence and comply with the Regulation (where Regulation has the meaning defined in the Distribution Licence) and any relevant legally binding decision of the European Commission and/or Agency for the Co-operation of Energy Regulators.	Positive
Promote efficiency in the implementation and administration of the Distribution Code	Neutral

This change will dispel any confusion over what compliance with limited frequency sensitive mode- overfrequency means for Type B power generating modules and

how it is to be demonstrated. This will help GB stakeholders comply efficiently with the RfG requirements.

## 8 Implementation

This modification needs to be progress without delay so that manufacturers gearing up for producing compliant equipment by the May 2019 deadline have sufficient time to design and implement solutions.

## 9 Legal Text

Draft proposed legal text for ECC 6.3.7 is attached as appendix 1  
Draft proposed legal text for G99 is attached as appendix 2

## 10 Recommendations

The Panel is asked to:

Agree that self-governance procedures should apply and

- Refer this proposal to a Joint GCRP/DCRP Workgroup for immediate assessment

