

# Stage 01: Modification Proposal

## Grid Code

# GC0111: Fast Fault Current Injection specification text

**Purpose of Modification:** To update the Grid Code and G99 with revised text for fast fault current injection to dispel any confusion in interpretation of the existing text.

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

- assessed by a Workgroup

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



**High Impact** None



**Medium Impact:** : Manufacturers, installers and owners of Type B to Type D power park modules connected to both distribution and transmission systems



**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 update the 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 (and Distribution Code) modification being implemented in GC0102 has recast the long-standing Grid Code fast fault current injection (FFCI) requirements in a way that is phrased so as to be compatible with the RfG. However the wording chosen is open to misinterpretation and has induced some confusion amongst a small number of stakeholders.

### *What*

The specification and testing requirements for FFCI need to be clarified in the Grid Code— and this clarification fed into G99 which also needs to be updated to reflect this.

### *Why*

Manufacturers of PPMs need clarity on the FFCI requirements so that they can ensure compliance at the point of manufacture. It is not possible to test for compliance with the FFCI requirements on site, so it is crucially important that the requirements are specified with complete clarity and freedom from ambiguity.

### *How*

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

### *Joint work with the DCRP*

As many of the generation units affected by these requirements will be connected to the Distribution Network it is appropriate that this is a joint WG, carrying on the approach taken in drafting EREC G99, whereby it is National Grid's responsibility under the RfG to specify these parameters, whereas their implementation needs to be jointly 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 by a Workgroup

**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 RfG requirements for FFCI are expressed quite differently to the historic GB formulation and it was necessary to reformulate the GB requirements to ensure alignment with the RfG.

In the resultant drafting of the long standing GB requirements, the new wording proposed may introduced some confusion and there is scope to clarify how some of the requirements are expressed. For example it might be appropriate to specifically address how the injected current might need to vary in phase and magnitude in respect of both time and retained voltage. However these are the issues for the Workgroup to discuss.

### 4 Code Specific Matters

- Familiarity with current Grid Code requirement.
- Understanding of the practical issues associated with designing fast fault current injection control schemes for power park modules

#### *Reference Documents*

Current GC0102 Grid Code  
EREC G99

### 5 Solution

The requirements for FFCI as specified in ECC 6.3.16.1 and G99 12.6 and 13.6 will need to be updated following agreement in the Workgroup as to the precise requirements that need to be complied with.

### 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:	
Relevant Objective	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
To promote efficiency in the implementation and administration of the Grid Code arrangements	Neutral
<b>Distribution Code Relevant Objectives</b>	
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 the FFCI requirements are. 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 are in no doubt about the necessary performance requirements.

## 9 Legal Text

Legal text to be developed by the WG

## 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.