



**GRID CODE  
FURTHER CONSULTATION DOCUMENT**

**Generator Compliance**

**Volume 1**

**The purpose of this document is to consult on the above Grid Code Modification Proposal with Authorised Electricity Operators liable to be materially affected by the proposed changes and forms the basis of the subsequent Report to the Authority**

Consultation Ref	A/10
Issue	1.1
Date of Issue	8 <sup>th</sup> February 2011
<b>Responses required by</b>	<b>8<sup>th</sup> April 2011</b>
Prepared by	National Grid

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**DOCUMENT LOCATION**

National Grid website:

<http://www.nationalgrid.com/uk/Electricity/Codes/gridcode/consultationpapers/>

**DISTRIBUTION**

<b>Name</b>	<b>Organisation</b>
AEO's	Various
GCRP Members/Alternates	Various
Interested Parties	Various
National Grid Website	

## A. INTRODUCTION

1. Paragraph 2 of Condition C14 of the Transmission Licence granted to the National Grid Electricity Transmission plc ("National Grid") provides that National Grid shall, in consultation with Authorised Electricity Operators liable to be materially affected thereby, periodically review the Grid Code and its implementation. That paragraph also requires National Grid, following such review, to send to the Authority:-
  - (a) a report on the outcome of such review;
  - (b) any proposed revisions to the Grid Code as National Grid (having regard to the outcome of such review) reasonably thinks fit for the achievement of the objectives set out in sub-paragraph (b) of Condition C14 of the Transmission Licence; and
  - (c) any written representations or objections from Authorised Electricity Operators (AEOs) (including any proposals by such operators for revisions to the Grid Code not accepted by National Grid in the course of the review) arising during the consultation process and subsequently maintained.
2. A Grid Code Compliance Working Group Report was produced in January 2009 setting out the proposed changes to the Grid Code, from which a Consultation Paper was duly published regarding the proposed changes. Following a final Working Group meeting to achieve consensus an amended version of the Working Group Report was re-issued to the Compliance Working Group members in December 2009.
3. A Consultation on proposed modifications to the Grid Code Generator Compliance process was published on 1<sup>st</sup> February 2010 which closed on 18<sup>th</sup> June 2010, from which 12 responses were received from AEOs. Upon reviewing all such responses, National Grid concluded firstly that there was broad industry support for the proposals although there were a number of consistent themes where a number of respondents had proposed similar revisions or improvements to the proposals. On consideration National Grid concluded that such revisions, allowed the modification to better meet Grid Code Relevant Objectives and therefore should be included. While National Grid believes the principle and intention of the drafting proposed under A/10 has not changed, the complex and substantial nature of the redrafting made to reflect the many comments received means that the user community should have a further opportunity to examine and comment on the proposals before a final report is presented to the Authority.
4. The original proposals within Consultation A/10 covered both directly transmission connected generation and Licence Exemptible Embedded Medium Power Stations (LEEMPS). National Grid is no longer proposing to specify a compliance process relating to LEEMPS and therefore the revised drafting does not relate to this class of users.
5. The proposals were initially developed through the Grid Code Compliance Working Group and then further developed by National Grid upon receipt of 12 responses from AEOs.
6. Comments upon the proposed changes within this Further Consultation should be sent to National Grid by **8<sup>th</sup> March 2011** as detailed in section C. The comments will be reviewed and responded to.
7. Following this Further Consultation, National Grid will prepare a Report to the Authority detailing National Grid's recommended changes to the Grid Code and all comments/responses received from Authorised Electricity Operators through both this Further Consultation and the original Consultation. Once sent to the Authority this report will be made available on National Grid's website.

8. Where Authorised Electricity Operators' responses have been marked as confidential they will not be published within the version of the Report to the Authority placed on the National Grid website.
9. The revisions to the Grid Code proposed by National Grid and sent to the Authority require approval by that body and will, if approved, come into force on such date (or dates) of which you will be notified by National Grid, in accordance with the Authority's approval.

## **B. DESCRIPTION OF THE PROPOSED AMENDMENTS AND THEIR EFFECTS**

### 1. Background

- 1.1 The Grid Code provisions specify, amongst other things, the requirements that apply to licensed generators connected to the National Electricity Transmission System (NETS) and Distribution Network Operator (DNO) networks and, through links in the Distribution Code, to License Exempt Embedded Medium Power Stations (LEEMPS). These requirements relate to technical capabilities, the provision of planning data to NGET, and the submission of operational data. The provisions ensure that NGET is able to plan and operate the NETS in line with its Transmission License obligations.
- 1.2 Historically, NGET has assessed compliance with the Grid Code requirements of generators with which it has contracts, both during the commissioning of new plant and throughout the operational life of existing plant. The assessment procedures and tests are not formally specified in documentation under industry governance, but in recent years NGET has issued Guidance Notes<sup>1</sup> (issued by NGET and made available to the industry on its web site) describing these procedures and tests in order to raise their visibility and ensure consistency.
- 1.3 Following discussions at the Grid Code Review Panel (GCRP), it was agreed that there will be benefit in formally defining a process that should be followed by NGET and generators in assessing and demonstrating compliance with the Grid Code provisions. The Compliance Working Group was established to agree proposals to achieve this.
- 1.4 Based on a request from the DNOs, a review of the compliance arrangements for LEEMPS, including a possible transfer to NGET of some of the compliance responsibilities, was included in the remit of the compliance working group. The Terms of Reference were agreed and these are shown in the Working Group Report, shown in Appendix A of the Original A/10 Consultation document<sup>2</sup>.
- 1.5 This document contains a summary of the redrafting undertaken following consideration of the comments received from the A/10 Consultation, split out into licensed generation and LEEMPS generation. National Grid has responded to each of the 12 respondents of the A/10 Consultation directly, addressing each comment in detail and indicating what action has been taken. This will allow each of these respondents to confirm that their issues have been resolved, or otherwise.

### 2.0 Revisions to licensed generation compliance procedures

- 2.1 The following is a high level summary of the redrafting that has been carried out following consideration of the comments received from the A/10 consultation. The most important change is to accede to the request to create a new Grid Code section, the "Compliance Processes" into which the majority of the text has been transferred with the exception of the testing detail which has been relocated into OC5. National Grid has also taken on board many of the drafting changes proposed by correspondents.
- 2.2 The Connection Conditions have had the process elements removed to the new Compliance Processes (CP). The items for submission prior to connection have been left unchanged in the Connection Conditions (CC.5.2) but could be moved to the CP if the User community wished. The requirement to provide signals for testing has been moved from the previously proposed appendix and added to CC.6.5 as this is a physical necessity that should be considered in plant design.

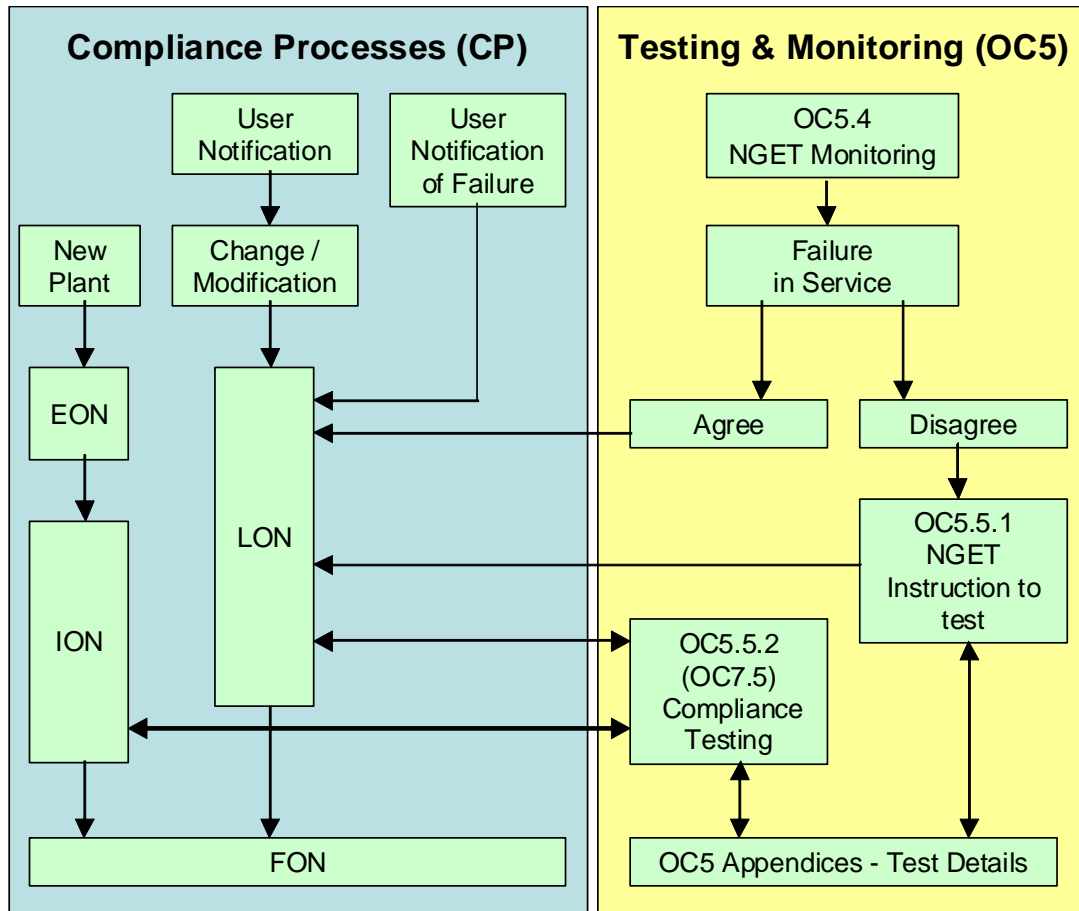
<sup>1</sup><http://www.nationalgrid.com/NR/rdonlyres/6C036707-27A4-4C43-AD8A-777487AAAFF/28685/GuidanceNotesforPowerParkDevelopersIssue2September.pdf>  
<http://www.nationalgrid.com/NR/rdonlyres/B4DF2400-96FD-40E5-AF44-8DB88AADA5DF/28686/GuidanceNotesforSynchronousGeneratorsIssue11Septem.pdf>

<sup>2</sup> <http://www.nationalgrid.com/uk/Electricity/Codes/gridcode/consultationpapers/>

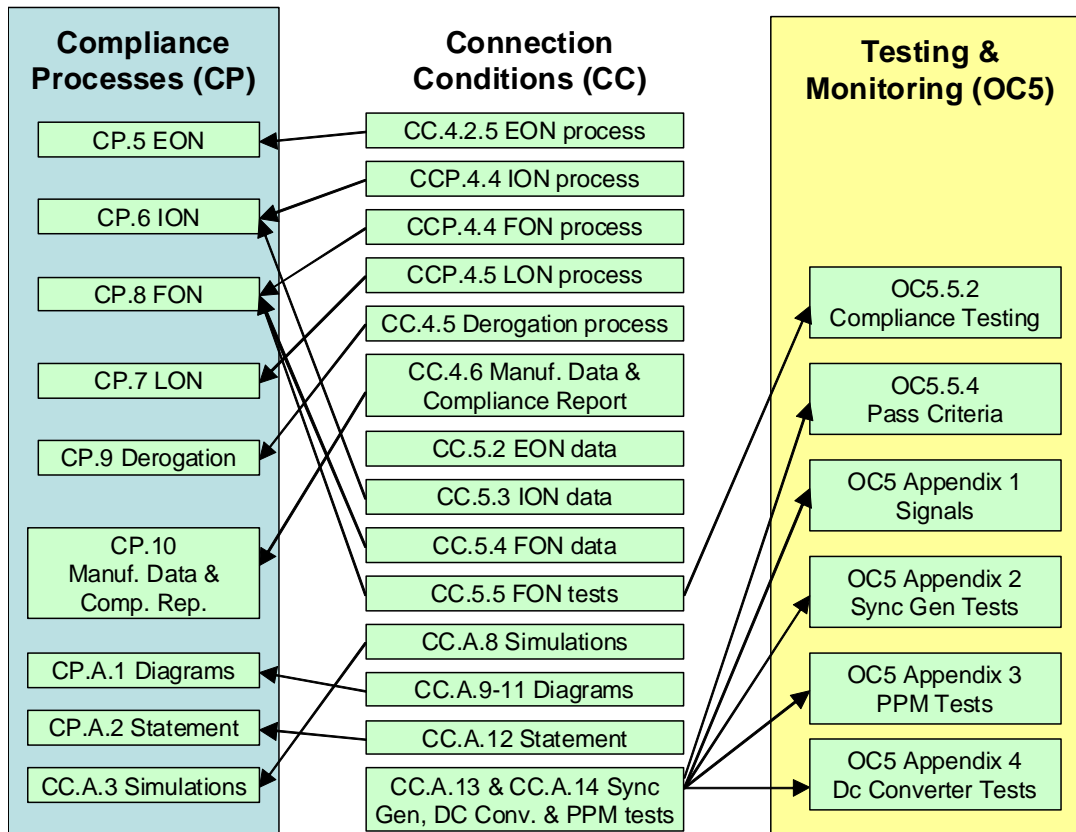
- 2.3 The Compliance Processes have been added as a new section to the Grid Code using text proposed by A/10 and from CC.5.2. In the general the individual paragraphs transferred to the “Compliance Processes” remain substantially unaltered but have been re-ordered to reflect the sequential nature of the underlying process. This has allowed a considerable amount of duplication and cross referencing to be removed when compared to the drafting contained in consultation A/10. This streamlining to improve readability has merged the process description with the testing and submission of information appropriate for each stage. The overall structure is now:
- CP.1 Introduction
  - CP.2 Objective
  - CP.3 Scope
  - CP.4 Overview of the sections
  - CP.5 The process leading to energisation of a user system
  - CP.6 The process and information submissions leading to first synchronisation of generation
  - CP.7 The process and data submissions for on-load demonstration of compliance for generation
  - CP.8 The processes for changes/modifications/failures in generation over plant lifetime. The process for managing failures in service interlinks with the existing OC5 process for monitoring and testing.
  - CP.9 The processes for management of operation when seeking a derogation
  - CP.10 The process for using generic manufacturer information to demonstrate compliance.
- 2.4 Operating Code 5 has been extended to cover generator tests to demonstrate compliance as well as the existing facilities for NGET instructed tests on Users following monitoring. Table OC5.5.3 has been redrafted to incorporate and harmonise all “pass criteria” from the existing table and the detailed testing appendices previously included in the Connection Conditions under the A/10 consultation. Four Appendices have been added to OC5. The first consolidates the lists of signals required for on-site monitoring (previously existing in OC5.5.2.2(a)-(e) and in the testing appendices of the Connection Conditions). The second appendix describes the tests preferred for Synchronous Generators whilst the third describes the tests preferred for Power Park Modules and the fourth for DC Converters. These three test description appendices have been created from CC.A.13 and CC.A.14 in the A/10 consultation by separating out the DC Converter requirements and relocation of the signal specifications to the CC, signal lists to OC5.A.1 and pass criteria to OC5.5.3. The wording for offshore Power Park Modules has been altered to make it clear that voltage control/reactive capability testing is required against any requirements in the Bilateral Agreement at the offshore Grid Entry Point.
- 2.5 During the autumn of 2010 the Authority has consulted on and then directed National Grid to include a “Generator Build” option for offshore transmission. This allows the Generator the option to build and commission the network under the Grid Code prior to transfer of the network assets to the Offshore Transmission Owner. As a consequence the scope of compliance process has been modified to manage this option.
- 2.6 The inclusion of the “Generator Build” option within the compliance processes has been achieved by a small number of additional references to “OTSDUW” and “OTSUA” mainly in CP.2 and CP.4. An additional section has been added to the User Data File Structure in the DRC to provide for the submission of the offshore transmission system data during design and commissioning prior to the transfer of assets and an additional paragraph added to OC5 (OC5.A.3.1.8). The application of these clauses are applicable until the “OTSUA Transfer Time”.
- 2.7 While National Grid believes the intention of the drafting proposed and consulted on under A/10 has not been changed, the complex and substantial nature of the redrafting and changes to reflect the multitude of comments received means that the user community should have a further opportunity to examine and comment on the proposals before a report

is made to the Authority.

**Diagram of Relationship between Codes CP and OC5**



## Diagram illustrating relocation of Compliance Process from Connection Conditions



### 3.0 LEEMPS Compliance Assessment

- 3.1 National Grid is no longer convinced that Grid Code modification is required in relation to LEEMPS compliance assessment and therefore the revised drafting within Further Consultation A/10 does not contain any LEEMPS related elements.
- 3.2 During the initial Grid Code consultation and the consequential code changes to the Distribution Code, DCUSA and CUSC, it became increasingly apparent that the necessary limits of liability for LEEMPS compliance were far more complex than anticipated and the industry required mechanisms such as bilateral contracts directly between National Grid and LEEMPS generators. National Grid became very concerned that this is a direct contradiction of the previous Authority determination that LEEMPS should have a single and simple interface with its relevant DNO only. Consequently, National Grid no longer believes that, on balance, the original LEEMPS related proposals better meet its Licence Objectives but would warmly welcome views on this topic, especially relating to this assessment.

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#### 4.0 Impact on Grid Code

4.1 The proposed changes require amendments to the following Grid Code sections:

- i. Glossary and Definitions
- ii. Planning Code
- iii. Connections Code
- iv. Operating Code
- v. Data Registration Code

4.2 The creation of a new Grid Code section is also required:

- i. Compliance Processes

4.3 The associated legal text for the Working Group recommendations is outlined in Appendix A, B, C, D, E and F of Volume 2.

#### 5.0 Impact on Industry Documents

##### **Impact on Core Industry Documents**

5.1 Following revision of the proposals, relating to LEEMPS compliance, amendment is no longer anticipated to be required to the CUSC, DCUSA or Distribution Code. That withstanding, the impact of the new proposals will be assessed for each of these consequential code changes by following their respective code governance procedures.

##### **Impact on other Industry Documents**

5.2 None.

#### 6.0 Impact on National Electricity Transmission System (NETS)

6.1 These proposals will have no material impact on the NETS beyond improving the confidence in the application of the Grid Code requirements.

#### 7.0 Impact on Grid Code Users

7.1 These proposals will provide a high level of transparency within the Grid Code of the requirements associated with the compliance assessment process.

#### 8.0 Assessment against Grid Code objectives

8.1 The proposed changes outlined in the Working Group Report would better facilitate Grid Code Objective:

- (ii) to facilitate competition in the generation and supply of electricity

By ensuring that the compliance assessment process to be used by NGET is visible to all generators and manufactures, and by ensuring that the process applied is consistent for all.

#### 9.0 Environmental Impact

9.1 The proposed changes are not expected to have any material impact on CO<sub>2</sub> and other green house gas emissions.

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## RESPONSES

This section will contain a summary of responses received during the Original Consultation and this Further Consultation and will be completed as part of the Report to the Authority.

Views are invited upon the proposals outlined in this report, by the end of **8<sup>th</sup> March 2011**. Especially views on the following areas would be welcomed:

- Impact of the proposals on Grid Code users.
- Any improvements or changes to the proposals that in a respondent's view would better facilitate the objectives of the Grid Code.

Your formal responses may be:-

Posted to: Tom Ireland  
Electricity Codes  
Regulatory Frameworks  
National Grid Electricity Transmission plc  
National Grid House  
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Gallows Hill  
Warwick  
CV34 6DA

Emailed to: **Thomas.Ireland @uk.ngrid.com**

Direct Line: 01926 656152

### **List of Appendices within Further Consultation Volume 2**

- Appendix A - Grid Code – Compliance Processes
- Appendix B - Grid Code – Connection Conditions
- Appendix C - Grid Code - Glossary and Definitions
- Appendix D - Grid Code – Data Registration Code
- Appendix E - Grid Code – Operating Code
- Appendix F - Grid Code – Planning Code Code