nationalgrid

GRID CODE

CONSULTATION DOCUMENT

Grid Code changes relating to BSC modification P237 and P240

Extension of OC2 obligations upon NG to notify Offshore Generators of BMU Configuration

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	
Issue	0.1
Date of Issue	
Responses required by	
Prepared by	National Grid

DOCUMENT LOCATION

National Grid website:

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

DISTRIBUTION

Name	Organisation
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 (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. This review examines proposed changes to the existing Grid Code provisions which may be needed in parallel with (and as a consequence of) BSC modification P237 'Standard BM unit Configuration for Offshore Power Park Modules' and P240 'Switching Plant and Apparatus between BM Units'.

3. Following the implementaion of BSC modification P237 and P240, alternative BMU configurations will be allowed to be utilised in operational timescales. Consequently, a Grid Code change needs to be progressed in order to extend OC2 obligations to National Grid so that:
   i) a Standard BMU Configuration Diagram will be provided to the Generator
   ii) an Amended BMU Configuration Diagram will be provided to the Generator in operational timescales where applicable

4. The proposed changes to the Grid Code were presented to the Grid Code Review Panel (GCRP) on 19th November 2009

5. Comments upon the proposed changes within this consultation should be sent to National Grid by **xxxxxxx** as detailed in section C. The comments will be reviewed and responded to.

6. Following this 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 this consultation. Once sent to the Authority this report will be made available on National Grid's website.

7. 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.

8. 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

Background

9. For Offshore Power Stations comprised of a large number of strings, operating each string as a separate BMU would cause a significant operational burden for both the Generator and National Grid. Therefore reducing the number of BMUs by aggregating the strings, in accordance with operational requirements, has significant benefits for both parties. Furthermore, to reduce restrictions on generation under outage conditions, some offshore networks with more than one connection to the shore are designed to enable the connection point of turbine strings to be 'moved' between cables and transformers. The combination of aggregation and transferable connections means that the composition of a BMU, in terms of turbine strings is not fixed, and is dependent upon the configuration of the offshore network and turbine availability, see figure 1, Appendix A.

10. Previously, under BSC rules neither of the above facilities was allowed. Two modification proposals put before the BSC Panel to allow BMU aggregation (P237) and allow turbine strings to be transferred between BMUs (P240) were implemented on 20 November 2009 and 27 January 2010 respectively. Following the implementation of BSC modifications P237 and P240, alternative BMU configurations will be allowed to be utilised in operational timescales, which will affect the way in which the generation and the transmission system are operated.

11. The standard BMU Configuration for Offshore Power Park Modules under normal intact conditions will be agreed by the Generator and National Grid prior to the Bilateral Connection Agreement being signed. An obligation to provide the diagram should be included in the Grid Code.

12. In operational timescales National Grid and the Generator will co-ordinate outages and determine the Amended BMU Configuration of the offshore network and the BMUs through the existing OC2 process. Changes to the configuration of the BMUs may require consequential changes to:-
    a. settlement metering
    b. turbine control systems
    c. National Grid real time and offline modelling

13. Any misunderstanding on the part of National Grid or the Generator on the Amended BMU Configuration could lead to unnecessary restrictions on generator output. It would therefore be prudent for National Grid to provide the Generator with a diagram showing the agreed BMU configuration at week ahead.

14. Both the Power Park Availability Matrix (PPAM) and the BMU configuration diagram are required by National Grid to model the offshore network. The PPAM defines which turbines are connected to a particular Power Park Module whereas the BMU configuration diagram defines how the Offshore Power Park Strings are connected to the transmission system. The boundaries of a PPAM and the BMU Configuration Diagram are shown on figure 1, Appendix A.

Proposed Grid Code Changes

15. The proposed changes to OC2 put an obligation upon the Generators and National Grid to agree a Standard BMU Configuration and for National Grid to inform the Generators when an Amended BMU Configuration is required for an outage or fault condition.

16. A new definition for Standard BMU Configuration and Amendment BMU Configuration is required.

17. The proposed amendments are shown in Appendix B.

Impact on GB Transmission System

18. The proposed changes will not have any adverse impact on the GB Transmission System. The proposed changes will facilitate the discharge of potential BSC obligations by the National Electricity Transmission system operator. Maximising the volume of BMUs that can access the system will assist with security of supply issues and facilitate competition in the supply of electricity.

Impact on Grid Code Users

19. The proposals will place additional obligations on National Grid to determine the Amended BMU configuration and for Generators to be aware of and to agree to the configuration. This should provide additional clarity to Users and ensure maximum utilisation of turbine strings. There maybe consequential changes to the settlement metering, turbine control systems and National Grid real time and offline modelling.

Assessment Against Grid Code Objectives

20. The proposed changes detailed in this consultation document would
    I. Permit the development, maintenance and operation of an efficient, coordinated and economical system for the transmission of electricity;
    II. Facilitate competition in the generation and supply of electricity
    III. Promote the security and efficiency of the electricity generation,transmission and distribution system in Great Britain

Impact on Industry Documents

21. *Impact on Core Industry Documents*
None

22 .*Impact on other Industry Documents*
None.

C. RESPONSES

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

24. Views are invited upon the proposals outlined in this report, which should be received by xxxxxxxx. Views on the following areas would be especially 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.

25.. Your formal responses may be:-

Posted to: xxxxxxxxxx

Appendix A: An Example of a Standard and Amended BMU Configuration Diagram

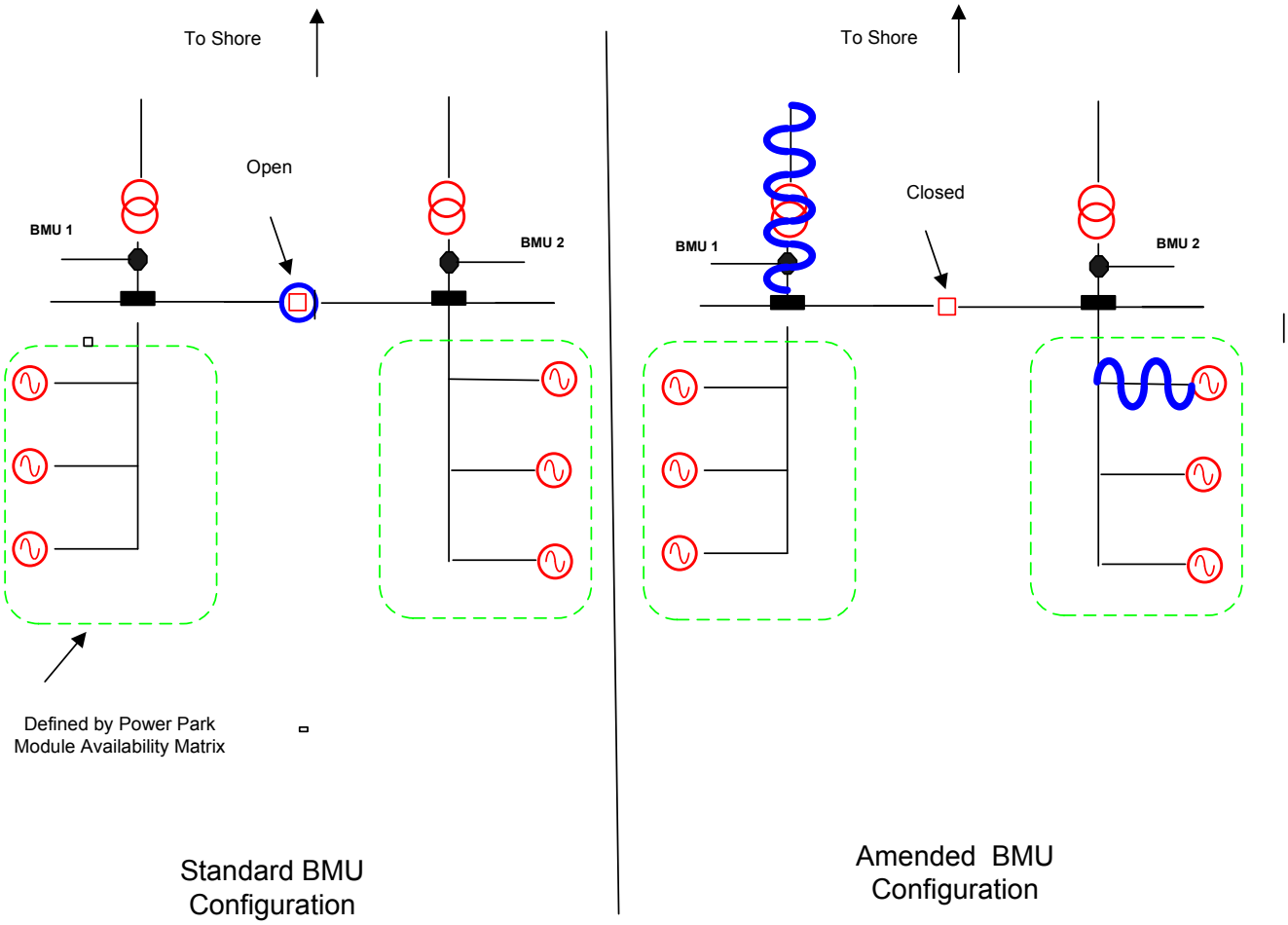

Figure 1

Appendix B: Proposed Grid Code Changes.

Glossary and Definitions

Standard BMU Configuration	The BMU configuration agreed between the Generator and National Grid.
Amended BMU Configuration	The BMU configuration agreed through the OC2 process to be adopted during outage or fault conditions

Please see separate document for OC2 draft legal text.