



# National Grid

## GRID CODE CONSULTATION DOCUMENT

### GRID CODE MODIFICATIONS TO SUPPORT THE INTRODUCTION OF A “MAXIMUM GENERATION SERVICE”

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

Consultation Ref	J/03
Issue	1.0
Date of Issue	22 <sup>nd</sup> September 2003
<b>Responses required by</b>	<b>6<sup>th</sup> October 2003</b>
Prepared by	National Grid

## DOCUMENT LOCATION

National Grid website:

[http://www.nationalgridinfo.co.uk/grid\\_code/mn\\_consultation\\_papers.html](http://www.nationalgridinfo.co.uk/grid_code/mn_consultation_papers.html)

## DISTRIBUTION

Name	Organisation
AEO's	Various
GCRP Members/Alternates	Various
Interested Parties	Various
National Grid Industry Information Website	

A. Introduction

1. National Grid Company plc ("National Grid"), in accordance with its obligations under paragraph 2 of Condition 7 of the Transmission Licence, believes that it is appropriate to review, in consultation with authorised electricity operators liable to be materially affected thereby, the Grid Code and its implementation in certain respects.
2. This review is concerned with identifying changes needed to the Grid Code in order to facilitate the provision of a "Maximum Generation Service". This service would provide a route by which National Grid may call for additional generator output under emergency conditions. Such additional output may be physically available but its delivery is currently problematic for a variety of reasons. The proposed changes to the Grid Code were discussed at the Grid Code Review Panel meeting held on 9 September 2003 where National Grid informed Panel Members that it intended to consult on these changes. Full details of the proposed Maximum Generation Service and how it would be initiated can be found in the consultation on Licence Condition AA4 documentation<sup>1</sup> issued by National Grid on 12/09/03.
3. Following receipt of comments from those authorised electricity operators which it has consulted by this Paper, National Grid intends, in accordance with paragraph 2 of Condition 7 of the Transmission Licence, to send to the Authority :-
  - (a) a report on the outcome of its review, including this consultation process;
  - (b) the proposed revisions to the Grid Code which National Grid (having regard to the outcome of such review) reasonably thinks fit for the achievement of the objectives of the Grid Code referred to in subparagraph (b) of paragraph 1 of Condition 7 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.
4. The report will also be made publicly available on National Grid's website.
5. The revisions to the Grid Code proposed by National Grid and sent to the Authority then 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.

---

<sup>1</sup> [http://www.nationalgridinfo.co.uk/balancing/mn\\_consultations.html](http://www.nationalgridinfo.co.uk/balancing/mn_consultations.html)

---

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

### 6. Background

- 6.1 Many generators are able to produce energy over and above the normal design operating capability of their plant. Different plant types have different methods of generating this energy, (for instance, switching out feeder heaters, duct firing, oil over burn or via GT NOx control). In addition, certain generators may be effectively able to provide extra MW by reducing site demand. Whether the generator was reducing load or producing energy in the ways described above, the methods are non-sustainable. Prior to NETA, this energy was available via the use of 'Maxgen' instructions. 'Maxgen' was delivered on a 'reasonable endeavours' basis, paid on delivered energy over and above the re-declared availability and did not affect the Use of System Charges paid by the generator.
- 6.2 By its nature, Maximum Generation energy is uncertain, as it is dependent upon a number of factors such as ambient temperature, prevailing operating conditions, state of the plant or quality of the fuel. It is therefore difficult to offer the energy as a firm service. Furthermore, generators have indicated that taking account of the potential for delivering this 'additional' output within their Transmission Entry Capacity (TEC) submission proves not to be commercially viable since it would attract Use of System Charges and Business Rates.
- 6.3 The current BSC and Grid Code rules are not designed for Generators to make BM offers to provide this energy (e.g. even if it were only accessed by issuing an Emergency Instruction to the generators) since as currently drafted it would have to be delivered on a firm basis.
- 6.4 The proposal that a Maximum Generation Service should be developed for a post NETA world was made at a recent Operational Forum by several market participants, who pointed out that such additional output could provide useful when generation is short. National Grid considers that it is important to facilitate access to this additional output in order to maintain security of supply and that this mechanism is available for the forthcoming winter.

### 7. Proposed Changes

- 7.1 The proposal is to establish a new Ancillary Service (Maximum Generation Service) that would only be called via an Emergency Instruction under Emergency Circumstances as set out in BC2.9 of the Grid Code. Full details of the proposed Maximum Generation Service and how it would be initiated can be found in the consultation on AA4 documentation issued by National Grid on 12/09/03 and can be found on the National Grid website, along with the proposed changes to licence documents.

[http://www.nationalgridinfo.co.uk/balancing/mn\\_consultations.html](http://www.nationalgridinfo.co.uk/balancing/mn_consultations.html)

- 7.2 In providing the Maximum Generation Service, a generator may be required to exceed its TEC. The CUSC currently allows a generator to export power in excess of TEC if instructed to do so through an Emergency Instruction (under

BC2.9). Therefore no change to the CUSC is required in order to implement this service.

- 7.3 However, the definition of an Emergency Instruction in BC2.9 needs to be extended to specifically allow for the new service. This is required as BC2.9.2.3 (and also section Q 5.1.3(b) of the BSC) state that Emergency Instructions will be treated as Bid-Offer acceptances in the BM, with the exception of those set out in BC2.9.1.2 (e). Therefore, as Bid/Offer acceptances are for firm delivery and in view of the non-firm nature of this new service, it needs to be included in BC2.9.1.2 (e).
- 7.4 National Grid considers that it is important that there is a mechanism in place to gain access to this energy for winter 2003/04 so that it may be used at times of generation shortage to balance the system and assist in providing security of supply. In the longer term a more developed service could be considered. This is likely to involve substantial changes to the BSC and/or CUSC (for example to allow for non-firm BM offers) and is therefore not considered feasible for this winter.

C. COMMENTS

8. National Grid would be grateful to receive your comments on, or any suggestions you may have in relation to, these proposed amendments to the Grid Code. Comments would be welcomed and should be sent to National Grid by **Monday 6<sup>th</sup> October 2003**. The comments will be reviewed and responded to and National Grid will then prepare its report to the Authority.
9. Unless otherwise marked as confidential any responses containing objections to the proposals which are maintained will be published on our website in the copy of the Report to the Authority referred to in paragraphs 3 and 4.
10. Your formal responses may be:-

Posted to: David Payne  
Industry Codes  
Commercial Frameworks  
National Grid Company plc  
National Grid Transco House  
Warwick Technology Park  
Gallows Hill  
Warwick  
CV34 6DA

Emailed to: [david.payne@ngtuk.com](mailto:david.payne@ngtuk.com)

**Page left intentionally blank**

## Appendix 1

### Proposed draft indicative changes to the Grid Code to enable Maximum Generation Services

The following sets out indicative changes required to the Grid Code to allow NGC to call for Maximum Generation Services.

All changes are in red text with deletions struck out and insertions underlined.

Glossary and Definitions: insert new definitions:

**Maximum Generation Service, MGS**

**A service utilised by NGC in operating the Total System if a User (or other person) has agreed to provide it under a Maximum Generation Service Agreement.**

**Maximum Generation Service Agreement**

**An agreement between a User and NGC for the payment by NGC to that User in respect of the provision by such User of a Maximum Generation Service.**

### **Balancing Code 2**

The following indicative changes are proposed to BC2.9. The entirety of BC2.9.1-3 has been included for completeness.

#### BC2.9 **EMERGENCY CIRCUMSTANCES**

##### BC2.9.1 **Emergency Actions**

BC2.9.1.1 In certain circumstances (as determined by **NGC** in its reasonable opinion) it will be necessary, in order to preserve the integrity of the **NGC Transmission System** and any synchronously connected **External System**, for **NGC** to issue **Emergency Instructions**. In such circumstances, it may be necessary to depart from normal **Balancing Mechanism** operation in accordance with BC2.7 in issuing **Bid-Offer Acceptances**. **BM Participants** must also comply with the requirements of **BC3**.

BC2.9.1.2 Examples of circumstances that may require the issue of **Emergency Instructions** include:-

- (a) **Events** on the **NGC Transmission System** or the **System** of another **User**; or
- (b) the need to maintain adequate **System** and **Localised NRAPM** in accordance with BC2.9.4 below; or
- (c) the need to maintain adequate frequency sensitive **Generating Units** in accordance with BC2.9.5 below; or
- (d) the need to implement **Demand Control** in accordance with OC6; or

- (e) (i) the need to invoke the **Black Start** process or the **Re-Synchronisation of De-Synchronised Island** process in accordance with OC9; or
- (ii) the need to request provision of a **Maximum Generation Service.**

BC2.9.1.3 In the case of **BM Units** in England or Wales, **Emergency Instructions** will be issued by **NGC** direct to the **User** at the **Control Point** for the **BM Unit** and may require an action or response which is outside its **Other Relevant Data**, **QPNs**, or **Export and Import Limits** submitted under **BC1**, or revised under **BC1** or **BC2**, or **Dynamic Parameters** submitted or revised under **BC2**.

BC2.9.1.4 In the case of a **Network Operator** or an **Externally Interconnected System Operator**, **Emergency Instructions** will be issued to its **Control Centre**.

BC2.9.2 Implementation of **Emergency Instructions**

BC2.9.2.1 **Users** will respond to **Emergency Instructions** issued by **NGC** without delay and using all reasonable endeavours to so respond. **Emergency Instructions** may only be rejected by an **User** on safety grounds (relating to personnel or plant) and this must be notified to **NGC** immediately by telephone.

BC2.9.2.2 **Emergency Instructions** will always be prefixed with the words “This is an **Emergency Instruction**”.

BC2.9.2.3 In all cases under this BC2.9 except BC2.9.1.2 (e) where **NGC** issues an **Emergency Instruction** to a **BM Participant** which is not rejected under BC2.9.2.1, the **Emergency Instruction** shall be treated as a **Bid-Offer Acceptance**. For the avoidance of doubt, any **Emergency Instruction** issued to a **Network Operator** or to an **Externally Interconnected System Operator** will not be treated as a **Bid-Offer Acceptance**.

BC2.9.2.4 In the case of BC2.9.1.2 (e) (ii) where **NGC** issues an **Emergency Instruction** under a **Maximum Generation Service Agreement** payment will be dealt with under the **Maximum Generation Service Agreement.**

BC2.9.3 Examples of **Emergency Instructions**

BC2.9.3.1 In the case of a **BM Unit**, **Emergency Instructions** may include an instruction for the **BM Unit** to operate in a way that is not consistent with the **Dynamic Parameters**, **QPNs** and/or **Export and Import Limits**.

BC2.9.3.2 In the case of a **Generator**, **Emergency Instructions** may include:

- (a) an instruction to trip one or more **Gensets**; or
- (b) an instruction to trip **Mills** or to **Part Load** a **Generating Unit**; or

- (c) an instruction to **Part Load** a **CCGT Module**; or
- (d) an instruction for the operation of **CCGT Units** within a **CCGT Module** (on the basis of the information contained within the **CCGT Module Matrix**) when emergency circumstances prevail (as determined by **NGC** in **NGC's** reasonable opinion)- or
- (e) an instruction to generate outside normal parameters, as allowed for in a **Maximum Generation Service Agreement**.