

## Grid Code Review Panel

### Grid Code Requirement for Electronic Communication Facilities between NGET and BM Participants Issue 1

#### Summary

1. This paper proposes changes to the Grid Code to ensure NGET has continued ability to instruct load changes and ancillary services in the Balancing Mechanism (BM) in an efficient and co-ordinated manner.
2. The proposed changes relate to:
  - the process by which the requirement to install an automatic logging device is determined; and
  - the means by which ancillary services instructions are issued.

#### Introduction

3. As National Electricity Transmission System Operator (NETSO), National Grid Electricity Transmission plc (NGET) is required to co-ordinate and direct the flow of electricity onto and over the National Electricity Transmission System in an efficient, economic and co-ordinated manner. This is achieved through the use of balancing services, which include ancillary services, offers and bids made in the Balancing Mechanism (BM) and other services, such as energy trades.
4. Looking to the future, the UK faces an unprecedented change in the generation fleet due to the closure of older fossil fuel and nuclear power stations and the expected connection of significant volumes of new renewable, nuclear and gas-fired generation. Many of these older fossil fuel power stations provide us with significant volumes of balancing services, whilst the expected new generation will bring with it the need to manage increasing levels of variability and inflexibility.
5. Our principal means of accessing balancing services is via Electronic Despatch Logging (EDL). EDL is the means by which instructions are issued by NGET and certain data submitted by Generators. It is known in the Grid Code as an 'automatic logging device'. Control Telephony is used as a backup in the event of failure of EDL.
6. We take responsibility for (and fund) the communication paths for EDL and Control Telephony (to the extent that it is GB based<sup>1</sup>), providing the necessary communication links and connection equipment at the User's Control Point. The User provides and installs the EDL terminal and client software at their control point.
7. The Grid Code Connection Conditions (CCs) currently place the decision whether to install an automatic logging device at the discretion of the User, stating that an automatic logging device is required to be installed if the User wishes to

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<sup>1</sup> For overseas control points, the User currently pays for the excess installation costs (for both EDL and Control Telephony) over and above those that would be incurred if the Control Point were based in Great Britain via a one-off charge in accordance with clause 2.14.4 of the CUSC.

participate in the BM, so that we may electronically issue instructions to the User; and the User may submit revised Export and Import Limits (BC1.4.2(c)) and current Operational Day Dynamic Data (BC2.5.3.1).

8. However, the Balancing Codes (BCs) refer to the automatic logging device as being required for the instruction of mandatory ancillary services, which is at odds with the discretion provided for in the CCs.
9. To maintain our ability to co-ordinate and direct the flow of electricity onto and over the National Electricity Transmission System in an efficient, economic and co-ordinated manner, we wish to ensure continued access to balancing services from the widest possible range of generation.
10. This paper proposes changes to the Grid Code that are designed to allow us to maintain the technical ability to access sufficient balancing services in the required timescales to allow us to carry out our duties in accordance with the requirements of our transmission licence.

### **Summary of Current Grid Code Requirements**

11. The Grid Code contains a definition for 'BM Participant', as follows: *"A person who is responsible for and controls one or more BM Units or where a Bilateral Agreement specifies that a User is required to be treated as a BM Participant for the purposes of the Grid Code. For the avoidance of doubt, it does not imply that they must be active in the Balancing Mechanism."*
12. The Grid Code (CC 6.5.8) places the following requirements on BM Participants in respect of electronic data communication facilities:
  - a) *All BM Participants must ensure that appropriate electronic data communication facilities<sup>2</sup> are in place to permit the submission of data, as required by the Grid Code, to NGET.*
  - b) *In addition, any User that wishes to participate in the Balancing Mechanism must ensure that appropriate automatic logging devices are installed at the Control Points of its BM Units to submit data to and to receive instructions from NGET, as required by the Grid Code...*
13. If a User chooses not to participate in the BM, there is no clear requirement under the Connection Conditions to install an automatic logging device.
14. However, the Grid Code requires the provision of mandatory ancillary services from certain generators. BC2.6.1(a) states that, with the exception of BC2.6.1(c), '...Ancillary Service instructions shall be given by automatic logging device...'. BC2.6.1(c) allows instructions to be given by telephone, but only in the event of a failure of the automatic logging device.
15. The Grid Code therefore currently gives conflicting messages regarding the need to install an automatic logging device.

### **The Issue**

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<sup>2</sup> Currently, Electronic Data Transfer (EDT) is the means by which data are submitted to NGET by generators.

16. The Grid Code CCs currently draw a link between the installation of an automatic logging device and a User's choice whether or not to participate in the BM. We are concerned that this linkage precludes a co-ordinated approach being taken regarding access to plant for the provision of balancing services. In particular, we are concerned that an increasing volume of wind generation is connecting to the network, but choosing not to participate in the BM. The Grid Code does not currently require the installation of an automatic logging device in such circumstances.
17. In our recent consultation document<sup>3</sup> "Operating the Electricity Transmission Networks in 2020" we asked whether we were correct in assuming that wind generation is controllable enough to assist in operating the networks.
18. Most respondents stated that wind generation was likely to be controllable but that they did not see clear economic drivers to encourage this. However flexible operation will inevitably be required from wind farm operators at some point in the future, increasingly so as installed capacity grows. Ultimately, wholesale and imbalance prices should encourage flexible operation particularly where high wind generation output coincides with low demand periods.
19. Current Grid Code provisions present the risk that, going forward, a significant percentage of the plant mix will be unable to efficiently provide balancing services through their own choice not to install an automatic logging device, even where market conditions change such that it becomes more attractive to provide such services.

### **Proposed Solution**

20. To avoid the future scenario described in paragraph 19 we propose to remove the linkage between a User's desire to participate in the BM and the installation of an automatic logging device and instead set out in the Grid Code the conditions under which an automatic logging device would be required.
21. The Grid Code (CC6.5.8(a)) states that "All BM Participants must ensure that appropriate electronic data communication facilities are in place to permit the submission of data, as required by the Grid Code, to NGET." We propose to replicate this approach in CC6.5.8(b) to mandate the requirement to install an automatic logging device.
22. To achieve an appropriate balance between (a) the ability to efficiently instruct load changes and ancillary services and (b) the cost of providing such efficiency via the installation of an automatic logging device, we propose the mandatory requirement to install an automatic logging device between NGET and Control Points where the combined Registered Capacity managed from a single Control Point equals or exceeds 100 MW.
23. For providers of mandatory ancillary services from power stations of less than 100 MW capacity, we propose to determine the requirement (and periodically review this requirement) to install an automatic logging device on a case-by-case basis following discussions with the connectee.

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<sup>3</sup> <http://www.nationalgrid.com/NR/ronlyres/32879A26-D6F2-4D82-9441-40FB2B0E2E0C/39517/Operatingin2020Consulation1.pdf>

24. For the avoidance of doubt, the proposal will not imply in any way that there is any obligation for plant to actively participate in the BM.
25. The proposed changes to the Grid Code text are contained in the annex to this paper.

### **Implementation**

26. We propose that the changes outlined in this paper will be forward looking and take effect from a fixed point in time (to be agreed).

### **Responsibilities**

27. The installation of EDT is the responsibility of the User. They are responsible for purchasing and developing the information systems used to produce the EDT submissions and for providing the communications link(s) from their Trading Point to NGET. The User is able to choose the trade-off between the quality and resilience of their EDT information systems and communications against the risk of not being able to submit Physical Notification and Bid-Offer Data to NGET.
28. Generally, the EDL communication link is between NGET and a Control Point at a power station, although it can be the case that a number of smaller stations are aggregated together at a common Control Point, which would reduce the number of EDL routes required. EDL does, however, require a separate communications service to EDT.
29. Due to the benefit we see from the installation of EDL, we take responsibility for its communication path, providing the necessary communication links and connection equipment at the User's Control Point (subject to the provisions set out in footnote 1). The User provides and installs the EDL terminal at their control point, the cost of which is relatively small and includes the cost of a PC, suitable EDL client software and the necessary testing.

### **Impact of BM Replacement Project**

30. Our current BM systems, which enable us to manage real-time electricity supply and demand as well as interfacing with market participant systems and the Balancing Mechanism Reporting Service (BMRS), are nearing the end of their design life, and we have initiated a project to replace them.
31. The replacement systems will feature the continued availability of the existing EDT and EDL interfaces. Whilst, post go-live, replacements for EDT, EDL and other electronic communications will be offered to market participants (which will use modern technology and international technical standards where possible), the principles proposed within this paper are independent of the actual technology used to implement the electronic communications facilities.

### **Way Forward**

32. GCRP members are invited:
  - To consider the issue described in this paper;
  - To agree that National Grid should proceed to a one month industry wide consultation on the proposed changes.

## ANNEX: Proposed Changes to Grid Code Text

This annex contains the suggested changes to the Grid Code text that will give effect to the proposal contained within this paper.

### Connection Conditions

Electronic Data Communication Facilities

#### CC.6.5.8

(a) All **BM Participants** must ensure that appropriate electronic data communication facilities are in place to permit the submission of data, as required by the **Grid Code**, to **NGET**.

(b) In addition,

1. any **User** that wishes to participate in the **Balancing Mechanism**;  
and
2. [from (insert date here)], all **BM Participants** in respect of a **Control Point** where the aggregate **Registered Capacity** of all **Power Stations** controlled from that **Control Point** is 100 MW or more;

must ensure that appropriate automatic logging devices are installed at the **Control Points** of its **BM Units** to submit data to and to receive instructions from **NGET**, as required by the **Grid Code**. For the avoidance of doubt, in the case of an **Interconnector User** the **Control Point** will be at the **Control Centre** of the appropriate **Externally Interconnected System Operator**.

(c) Detailed specifications of these required electronic facilities will be provided by **NGET** on request and they are listed as **Electrical Standards** in the Annex to the **General Conditions**.

### Balancing Code 1

#### 1.4.2 (d) Bid-Offer Data

Each **BM Participant** may, in respect of each of its **BM Units**, but must not in respect of its **Generating Units** submit to **NGET** for any **Settlement Period** of the next following **Operational Day** the data listed in **BC1** Appendix 1 under the heading of "**Bid-Offer Data**" to amend the data already held by **NGET** in relation to **Bid-Offer Data**, which would otherwise apply to those **Settlement Periods**. The submitted **Bid-Offer Data** will be utilised by **NGET** in the preparation and analysis of its operational plans for the next following **Operational Day**. Unless otherwise agreed with **NGET**, **Bid-Offer Data** may not be submitted unless an automatic logging device has been installed at the **Control Point** for the **BM Unit** in accordance with CC.6.5.8(b).

### Balancing Code 2

#### 2.6.1 Normal Communication with Control Points

(a) With the exception of BC2.6.1(c) below, unless otherwise agreed with **NGET**, **Bid-Offer Acceptances** and **Ancillary Service** instructions shall be given by automatic logging device and will be given to the **Control Point** for the **BM Unit**. For all **Planned Maintenance Outages** the provisions of BC2.6.5 will apply. For **Generating Units** communications under **BC2** shall be by telephone unless otherwise agreed by **NGET** and the **User**.

#### BC2.8.3 Rejection of Ancillary Service instructions

(a) **Ancillary Service** instructions may only be rejected, by automatic logging device or by telephone, on safety grounds (relating to personnel or plant) or because they are not

consistent with the applicable **Export and Import Limits, QPNs, Dynamic Parameters, Joint BM Unit Data, Other Relevant Data** or data contained in the **Ancillary Services**

Appendix 1 – Form of **Bid-Offer Acceptances**

BC2.A.1.1 This Appendix describes the forms of **Bid-Offer Acceptances**. As described in BC2.6.1, unless otherwise agreed with NGET, **Bid-Offer Acceptances** are normally given by an automatic logging device, but in the event of failure of the logging device, **Bid-Offer Acceptances** will be given by telephone.

Appendix 2 - Type and Form of **Ancillary Service** Instructions

BC2.A.2.3 As described in BC2.6.1, unless otherwise agreed with NGET, **Ancillary Service** instructions are normally given by automatic logging device, but in the absence of, or in the event of failure of the logging device, instructions will be given by telephone.