nationalgrid

Stage 01: Working Group Report

Grid Code

C/10 Grid Code Requirement for Electronic Communication Facilities between NGET and BM Participants

What stage is this document at?

01	Working Group Report
02	Industry Consultation
03	Report to the Authority

This proposal seeks to modify the Grid Code to clarify the requirements to install an automatic logging device.

This document contains the findings of the Working Group which formed in May 2010 and concluded in April 2011.

Published on: 05 May 2011

The Working Group recommends:
That changes are made to the Grid Code to clarify the requirement to install an automatic logging device

High Impact:
System Operator

Medium Impact:
Users

Low Impact:
None

Contents

About this document

This document contains the discussions and findings of a Working Group that has been tasked to investigate an issue within the Grid Code. To modify the Grid Code a Modification Proposal must be taken to the Grid Code Review Panel (GCRP). This Modification Proposal will outline the background to the issue, how to address it, any impacts it may have on the industry and a recommendation for the GCRP to proceed to a Working Group or to an Industry Consultation.

The GCRP, based on the Modification Proposal, will determine if any further work or debate is required. If the group feels that the issue could benefit from further examination it will be progressed to a Working Group. Terms of Reference will be created to outline the purpose and scope of the Working Group, as well as any timelines for reporting back to the GCRP. The Working Group will then meet to discuss the issue and produce a Working Group Report. This Working Group Report is then presented to the GCRP to determine if the Terms of Reference have been met and that a robust solution has been developed to meet the defect within the Grid Code.

If the GCRP feels that the issue has already been investigated thoroughly and a robust solution has been developed, the Modification Proposal will progress to an Industry Consultation. Grid Code Industry Consultations last approximately one month but timescales can alter based on the complexity of the issue.

Following the conclusion of the Industry Consultation, a Report to the Authority is produced which takes into account any responses to the Industry Consultation and puts forward recommendations to Ofgem on how to address the defect within the Grid Code. The Authority then considers the issue and the proposed solutions to make a determination.

Any Questions?

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1 Executive Summary

1.1 C/10 was raised at the May 2010 GCRP to address a defect within the Grid Code regarding the requirement to install an automatic logging device.

1.2 The principal means in which National Grid Electricity Transmission (NGET), as System Operator, access balancing services is via Electronic Dispatch Logging (EDL). EDL is the means by which instructions are issued by NGET and certain data is submitted by Generators. Within the Grid Code, EDL is known as an 'automatic logging device' and Control Telephony is used as a backup in the event of a failure of EDL.

1.3 Currently the requirement to install an automatic logging device is linked to a User's participation in the Balancing Mechanism. There is no clear requirement to have an automatic logging device installed for the dispatch of balancing services which results in an inefficient approach of dispatch by telephone.

1.4 The Working Group has reviewed the requirements under the Grid Code and proposes that a User will be required to have an automatic logging device installed if:

- they wish to actively participate in the Balancing Mechanism; or
- they are required to provide both Part 1 System Ancillary Services, namely Frequency Response and Reactive Power.

1.5 National Grid may waive or delay the requirement to install an automatic logging device should it be deemed inefficient.

1.6 The Working Group also recommends that an industry consultation for a period of 20 working days be undertaken subject to the approval of this Working Group Report by the Grid Code Review Panel (GCRP).

2 Background

2.1 National Grid Electricity Transmission plc (NGET), in its role as National Electricity Transmission System Operator (NETSO), is required to co-ordinate and direct the flow of electricity onto and over the National Electricity Transmission System (NETS) 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

2.2 The principal means in which NGET access balancing services is via Electronic Dispatch Logging (EDL). EDL is the means by which instructions are issued by NGET and certain data is submitted by Generators. Within the Grid Code, EDL is known as an 'automatic logging device' and Control Telephony is used as a backup in the event of a failure of EDL.

2.3 NGET take responsibility for (and fund) the communication paths for EDL and Control Telephony (to the extent that it is GB based), providing the necessary communication links and connection equipment at the User's Control Point. The User provides and installs the EDL terminal at their Control Point, which consists of a computer, suitable EDL client software and the necessary testing.

2.4 The Grid Code Connection Conditions (CCs) currently draw a link between the installation of an automatic logging device and a User's choice to participate in the BM (CC.6.5.8). NGET are concerned that this linkage, between the installation of an automatic logging device and participation in the Balancing Mechanism, precludes a co-ordinated approach being taken regarding access to plant for the provision of balancing services.

2.5 A User is able to provide balancing services regardless of whether they participate in the Balancing Mechanism but there is no clear requirement to install an automatic logging device unless a User is participating in the Balancing Mechanism. This results in areas of the Grid Code being at odds with each other. The Balancing Codes (BCs) refer to ancillary service instructions being given by automatic logging device (BC2.6.1) but if the User does not participate in the BM there is no clear requirement within the Grid Code for an automatic logging device to be installed.

2.6 NGET are concerned that an increasing volume of wind generation is connecting to the network, but choosing not to participate in the BM. This presents 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.

2.7 To maintain the 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, NGET wish to ensure continued access to balancing services from the widest possible range of generation.

2.8 C/10, presented to the GCRP in May 2010, proposes to address this discrepancy within the Grid Code regarding the requirement to install an automatic logging device. The changes to the Grid Code are designed to allow NGET to maintain the technical ability to access sufficient balancing services in the required timescales to allow them to carry out their duties in accordance with the requirements of their transmission licence.

2.9 It should be clarified that C/10 is not going to change the obligation on users to participate in the BM, it is up to users if they wish to participate.

3 Purpose & Scope of the Working Group

3.1 The original paper presented to May 2010 GCRP proposed to take the issue to Industry Consultation but following discussion within the GCRP it was determined that the issue should progress to a Working Group for further development.

3.2 At the first Working Group meeting on 20th August 2010, the Working Group members reviewed the Terms of Reference and agreed the following issues to be the focus of the Working Group:

(a) The circumstances under which an obligation to install an automatic logging device should apply to BM Participants of the National Electricity Transmission System;

(b) Development of cost effective solution and clarification of the Grid Code text relating to the use of an automatic logging device for issuing Bid-Offer Acceptances and Ancillary Service Instructions; and

(c) Recommendations regarding topics for further consideration that, whilst beyond the scope of the Grid Code, might require changes to other industry codes.

3.3 The Working Group also agreed that the outcomes would be:

(a) a GCRP paper recommending a way forward on the above issues, taking into account the group discussions

(b) draft legal text of the proposed Grid Code changes as appropriate

3.4 The original timescales of the group suggested that a paper would be delivered to the November 2010 GCRP. The timetable was later revised for a paper to be submitted to the May 2011 GCRP.

4 Working Group Discussions

4.1 The Working Group convened two meetings to discuss the issues presented in C/10. The first meeting was held on 20th August 2010 with the second on 29th March 2011.

4.2 At the first Working Group meeting, National Grid explained that under the current drafting in the Grid Code there is no clear requirement for a user to install an automatic logging device if they do not wish to participate in the Balancing Mechanism (BM). This contradicts the Balancing Codes, specifically BC2.6.1(a), which states that all ancillary service instructions shall be given by automatic logging device. The mandatory ancillary services are Frequency Response and Reactive Power, and National Grid requires Electronic Dispatch Logging (EDL) for both of these services. It was also clarified that this amendment is not going to change the obligation on users to participate in the BM, it is up to users if they wish to participate. The group acknowledged the current defect in regards to installing an automatic logging device to provide ancillary services.

4.3 Working Group members wanted to know how these instructions are currently relayed to generators and National Grid explained that in the absence of an automatic logging device the telephone would be used, however, this is not ideal especially looking towards the future within increasing volumes of variability and inflexibility associated with new renewable, nuclear and gas fired generation.

4.4 Concerns were raised that moving to an EDL system would remove the flexibility that a phone provides as EDL has to be to a fixed point. This is especially concerning when some stations are unmanned. It was explained that EDL goes to a Control Point which, under CC.7.9, currently has the requirement to be manned 24 hours a day.

4.5 The group sought clarification of the difference between Electronic Dispatch Logging (EDL) and Electronic Data Transfer (EDT), and how emergency instructions are given. EDL is a two way communication channel that allows for the instruction of generators whereas EDT is a one way communication channel that generators use to submit information, such as Physical Notification data, to National Grid. Emergency communications will continue to be given by telephone.

4.6 It was noted that the original paper presented to the May 2010 GCRP stated a single Control Point that was managing a combined Registered Capacity that equals or exceeds 100 MW would require an automatic logging device. National Grid explained this value was based on a cost benefit estimate. The group raised concerns that this arbitrary limit could create a situation in which multiple Control Points would be created by a User to avoid ever breaching the 100MW limit and being obligated to install an automatic logging device.

4.7 The Working Group thought that it would be sensible to have clearer guidelines regarding the circumstances in which an automatic logging device must be installed. Rather than an arbitrary limit at the Control Point it was suggested that the stations connected to the Control Point should be looked at.

4.8 In the first Working Group meeting the members determined that if a generator is considered 'Large' in their respective areas (NGET 100MW, SPT 30MW, SHETL 10MW) and has a requirement to provide a mandatory ancillary service they would be required to install an automatic logging device.

4.9 Through further discussion it became clear that this requirement could result in inefficient installation of EDL by capturing some generators that would likely never be instructed to provide ancillary services. The Working Group determined that if a generator has a requirement to provide both Part 1 System Ancillary Services as identified in CC.8.1, namely Frequency Response and Reactive Power[1], then they would be required to install an automatic logging device. National Grid may waive or delay the requirement to install an automatic logging device, based on this criterion, should it not be deemed efficient.

4.10 Based on the above criterion, National Grid was asked to conduct analysis to determine:

- ***How many generators would be impacted by the proposed criterion?***

  The analysis carried out by National Grid indicates that if we require EDL for all generators that are required to provide both Part 1 System Ancillary Services it is estimated that we may need to install EDL to 18 Control Points for generators connecting between the suggested implementation date of 1st January 2013 and 2019. These 18 Control Points would be controlling 13GW of plant.

- ***What would the cost be to implement to criterion?***

  The current costs associated with installing EDL and Control Telephony are approximately £30,000 - £40,000 to deliver per site and on going cost is approximately £7,000 per site. There are efficiencies in installing EDL together with Control Telephony which is why the total cost is quoted here.

4.11 The above analysis has only looked at Scotland to get an idea of the scale of the impact. It is estimated that 18 Control Points are going to require EDL installation as a result of the proposed changes to the Grid Code. However, this number could decrease as projects may not materialise and there could be some degree of consolidation of Control Points.

4.12 If a generator is required to provide both Part 1 System Ancillary Services, the following issues may be considered by National Grid when evaluating the efficiency of installing EDL to the Control Point and whether installation should be waived or delayed:

- Obligation to provide reactive power (generators that provide less than 15MVARs are not currently obliged to enter into a Mandatory Services Agreement with National Grid to provide Reactive Power);
- If the generator is embedded
- Restrictions on embedded generators reactive range required by the DNO.
- Size and location of the generator

[1] CC.8.1 requires all large generators to provide Reactive Power, however the CUSC only obliges National Grid to offer a Mandatory Services Agreement to generators that have a reactive capability of 15MVAR or more. Generators that have a reactive capability of less than 15MVAR can enter into a MSA with National Grid if they wish.

4.13 The offshore element was also discussed and it was noted by the Working Group that there is work ongoing elsewhere in regards to offshore ancillary services.

4.14 The issue of retrospectivity was discussed and it was determined that any changes would not be retrospectively applied.

4.15 The Working Group discussed the implementation strategy regarding any changes. It was noted that a station currently being built could be adversely impacted if new rules were enforced mid-construction. The group thought that putting a requirement on a Control Point should not adversely impact a new build although it may be prudent to attach an implementation timeline around commissioning or define an 'effective from' date.

4.16 The group discussed an implementation date and suggested that the new requirements would apply to those User's which have a completion date after 1st January 2013. It was felt that this would allow adequate time for the installation of EDL between requirements placed into the Grid Code and the completion of projects in 2013. The Working Group suggested there should be a question within the Industry Consultation that seeks views on an implementation date.

4.17 To reach the date of 1 January 2013, the Working Group was assuming changes to the Grid Code would occur in September/October 2011. This is of course dependent on an Authority decision and may need to be revised based on actual implementation date of the changes.

4.18 The group discussed the costs surrounding EDL. National Grid noted that they cover the cost of EDL to the Control Point as long as it is in Great Britain. Offshore EDL is charged at a one of cost for installation. The control telephony can be combined with EDL for efficiency reasons; however EDT and EDL will always be separate.

5 Working Group Recommendations

5.1 The Working Group has recognised the defect within the Grid Code surrounding the requirements to install an automatic logging device.

5.2 The Working Group recommends the following to address the issues raised in C/10:

(a) Clarify the requirements to have an automatic logging device installed through the proposed new Grid Code drafting found in Annex 1

(b) Progress to an Industry Consultation for a period of 20 Working Days

Annex 1 - Proposed Legal Text

Changes are required to the following sections of the Grid Code;

CC.6.5.8 (b)
BC2.6.1 (a)
BC2.A.2.3

CC.6.5.8 Electronic Data Communication Facilities

(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**;
   or
2. any **BM Participant** in respect of its **BM Units** at a **Power Station** where the **Construction Agreement** and/or a **Bilateral Agreement** has a **Completion Date** on or after 1 January 2013 and the **BM Participant** is required to provide all **Part 1 System Ancillary Services** in accordance with CC.8.1 (unless **NGET** has otherwise agreed)

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**.

BC2.6.1 Normal Communication with **Control Points**

(a) With the exception of BC2.6.1(c) below, **Bid-Offer Acceptances** and, unless otherwise agreed with **NGET**, **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**.

(b) **Bid-Offer Acceptances** and **Ancillary Service** instructions must be formally acknowledged immediately by the **BM Participant** (or the relevant person on its behalf) via the **Control Point** for the **BM Unit** or **Generating Unit** in respect of that **BM Unit** or that **Generating Unit.** The acknowledgement and subsequent confirmation or rejection, within two minutes of receipt, is normally given electronically by automatic logging device. If no confirmation or rejection is received by **NGET** within two minutes of the issue of the **Bid-Offer Acceptance**, then **NGET** will contact the **Control Point** for the **BM Unit** by telephone to determine the reason for the lack of confirmation or rejection. Any rejection must be given in accordance with BC2.7.3 or BC2.8.3.

(c) In the event of a failure of the logging device or a **NGET** computer system outage, **Bid-Offer Acceptances** and instructions will be given, acknowledged, and confirmed or rejected by telephone. The provisions of BC2.9.7 are also applicable.

(d) In the event that in carrying out the **Bid-Offer Acceptances** or providing the **Ancillary Services**, or when operating at the level of the **Final Physical Notification Data** as provided in BC2.5.1, an unforeseen problem arises, caused on safety grounds (relating to personnel or plant), **NGET** must be notified without delay by telephone.

(e) The provisions of BC2.5.3 are also relevant.

(f) Submissions of revised Mvar capability may be made by facsimile transmission, using the format given in Appendix 3 to **BC2**.

(g) Communication will normally be by telephone for any purpose other than **Bid-Offer Acceptances,** in relation to **Ancillary Services** or for revisions of Mvar Data.

(h) Submissions of revised availability of **Frequency Sensitive Mode** may be made by facsimile transmission, using the format given in Appendix 4 to **BC2**. This process should only be used for technical restrictions to the availability of **Frequency Sensitive Mode.**

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.