GB Grid Code – additional issues for second consultation on the GB Grid Code Text

An Ofgem/DTI mini-drafting consultation document

26 May 2004 116/04

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1. Introduction

1.1. The rationale for the introduction of a GB Grid Code[1] (GBGC) was published in December 2002 (the December 2002 GBGC consultation). In September 2003, Ofgem/DTI published 'The Grid Code under BETTA, Ofgem/DTI conclusions and consultation on the text of a GB Grid Code and consultation on change co-ordination between the STC[2] and user-facing industry codes' (the 'September 2003 GBGC consultation'). In May 2004, Ofgem/DTI published 'The Grid Code under BETTA, Ofgem/DTI conclusions and second consultation on the text of a GB Grid Code and conclusions on change management between the STC and each of the GB CUSC, GB BSC and GB Grid Code' (the May 2004 GBGC consultation). This document included draft two of the GBGC (GBGC D2) as Volume 2.

1.2. The May 2004 GBGC consultation identified a number of items that required further consideration by Ofgem/DTI and proposed that these should be addressed in a mini-drafting consultation that would supplement that document. Responses to this mini-drafting consultation are requested to be incorporated in the response to the May 2004 GBGC consultation wherever possible. All responses will be taken into account by Ofgem/DTI in their development of the near final draft of the GBGC to be published in July 2004.

1.3. A number of drafting errors have been identified in the May 2004 GBGC consultation, they are:

- in paragraph 5.18 the reference to F/04 should be to E/04
- in paragraph 6.42, the references to CC.6.1.5(b) should be to CC.6.1.5(a), and
- in paragraph 6.45 the 'reference not found' should refer to paragraph 4.81.

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[1] 'The Grid Code under BETTA, Ofgem/DTI consultation on a Grid Code to apply throughout GB' Ofgem/DTI, December 2002. Ofgem #78/02.
[2] The 'System Operator (SO) – Transmission Owner (TO) Code'.

1.4. The matters included in this mini-drafting consultation are:

- a consideration of whether there are duplicate obligations caused by the amendment of the definition of 'Genset' to include directly connected Small and Medium Power Stations
- proposals for Moyle interconnector provisions for the GBGC
- proposals for load management block provisions for the GBGC, and
- proposals for regional differences in the Data Registration Code that were identified as part of GCEG discussions.

2. Timetable and Responses

2.1. The proposed timetable and process for further development of the GBGC is as follows:

- responses to this mini-drafting consultation should be sent by Friday 18 June 2004 to Bridget Morgan (details below)
- subject to the responses received, it is planned that conclusions and a third draft legal text for the GB Grid Code ('GBGC D3') will be published in July 2004. It is anticipated that the GB Grid Code will be given legal force through powers provided by the E(TT) provisions of the Energy Act. The legal transition to a GB Grid Code will be addressed and consulted upon where appropriate in the near future, and
- further changes to the GB Grid Code that will apply under BETTA may be required during the period between production of draft 3 of the GBGC ('GBGC D3') and BETTA go-live. Should such changes arise, their inclusion in the GB Grid Code will be consulted upon at the time at which they arise.

3. Views invited

3.1. Parties are free to raise comments on any of the matters covered in this paper and in particular on those matters where views have been requested. Although transitional issues will be dealt with at a later date separately from the consideration here of the enduring arrangements, respondents should feel free to raise any such matters that arise in consideration of these issues. All responses, except those marked confidential will be published on the Ofgem website and held electronically in the Ofgem Research and Information Centre. Respondents should try to confine any confidential material in their responses to appendices. Ofgem prefers to receive responses in an electronic form so they can easily be placed on the Ofgem website.

3.2. Responses to this mini-drafting consultation are requested to be incorporated in the response to the May 2004 GBGC consultation wherever possible. However, written responses to this paper alone would also be considered and should be marked 'Response to GBGC additional matters mini-consultation' and sent by Friday 18 June 2004 to:

Bridget Morgan
Technical Directorate
Office of Gas and Electricity Markets (Ofgem)
9 Millbank
London
SW1P 3GE
Tel: 020 7901 7080
Fax: 020 7901 7075

3.3. Please e-mail responses to BETTA.Consultationresponse@ofgem.gov.uk marked 'Response to GBGC additional matters mini-consultation'. All responses will be forwarded to the DTI.

3.4. If you wish to discuss any aspect of this document, please contact Bridget Morgan at Ofgem bridget.morgan@ofgem.gov.uk or Renata Williams at the DTI (e-mail: renata.williams@dti.gsi.gov.uk, telephone: 020 7215 0442).

4. Duplicate obligations which may arise from the definition of 'Genset'

Introduction

4.1. One respondent to the September 2003 GBGC consultation considered that the redefinition of 'Genset' to include all directly connected plant (i.e. to include directly connected Small and Medium Power Stations) had led to the duplication of some obligations that apply to Small and Medium Power Stations. This respondent cited as an example that the change in definition of Genset would mean that for medium directly connected power stations, network operators would have a responsibility to provide information about the expected availability of these under Operating Code 1 (OC1) and that the generator would have similar information provision obligations under OC2. This respondent also considered that the revised definition of Genset was not consistent with the text in OC2.4.1.1(a) and in OC2.4.1.2.1 which explain that the obligations apply to both Embedded and non-Embedded Large Power Stations. Another respondent noted that there were some instances of drafting in OC2 which would require further amendment as the obligations in England and Wales Grid Code (EWGC) OC2 were based on the assumption that there were no medium or small directly connected power stations.

Discussion

4.2. Ofgem/DTI have reviewed the occurrences of the terms Medium Power Station and Small Power Station in the GBGC. The terms are used in the Planning Code, the Connection Conditions, Operating Code 1 (OC1) (Demand Forecasts), OC2 (Operational Planning and Data Provision), OC7 (Operational Liaison), OC9 (Contingency Planning), OC10 (Event Information Supply), Balancing Code 1 (BC1) (Pre Gate Closure Process), BC2 (Post Gate Closure Process) and the Data Registration Code and believe that, in all instances apart from those listed below, their usage is consistent with the revised definition of Genset. Where 'Medium Power Station' or 'Small Power Station' is qualified by 'Embedded' or the adjacent text refers to such stations being connected to a user system, then Ofgem/DTI consider that there is no possibility of overlap with the definition of Genset given that the revision to the definition of Genset is limited to Small and

Medium Power Stations that are directly connected to the transmission system. Ofgem/DTI further note that as such power stations are not connected to a User System then any Network Operator obligation in respect of these power stations (i.e. that in OC1.4.2(c)) could not be applicable.

4.3. In response to the specific matter raised by the respondent concerning OC1, Ofgem/DTI have reviewed the drafting of OC1 and consider that the obligations on Medium Power Stations in OC1 are designed to capture information about Embedded Medium Power Stations as these obligations refer to data requirements on a Grid Supply Point (GSP) basis. Ofgem/DTI consider that the obligation on Network Operators to provide information on Medium Power Station Output in OC.1.4.2(c) could only apply in respect of Embedded Medium Power Stations as there would not be a Network Operator for a non-Embedded Medium Power Station connection and to clarify this Ofgem/DTI propose a drafting change below. Ofgem/DTI further note that data requirements for non-Embedded Medium Power Stations are defined in OC2.4

Proposals

4.4. In their review of the GBGC obligations in respect of Small Power Stations, Ofgem/DTI did not identify any provisions where they considered that there was a risk of duplicate obligations as a consequence of the revised definition of Genset. Therefore, Ofgem/DTI are not proposing any clarification changes to the obligations in GBGC D2 in respect of Small Power Stations.

4.5. Ofgem/DTI propose to clarify the requirement in OC1.4.2(c) as follows:' For the specified time of the annual peak half hour Transmission System Demand, as specified by NGC under PC.A.5.2.2, the output of Embedded Medium Power Stations ~~(whether Embedded or not)~~ and .....' in line with the views set out in paragraph 4.3.

4.6. Other drafting matters, associated with the amendment to the definition of Genset to include Small and Medium Power Stations who are connected directly to the transmission system, have been identified in this review and Ofgem/DTI propose the following changes to GBGC D2:

- GBGC D2 OC2.4.1.1(a) currently states 'Under OC2 the interaction between NGC and Users will be as follows: (a) Each Generator and NGC In respect of outages of Large Power Stations (both Embedded and non-

Embedded) and in respect of outages of other Plant and/or Apparatus directly connected to the GB Transmission System'. Whilst not strictly incorrect, Ofgem/DTI propose that the drafting would be clearer if it were amended as follows: '(a) Each Generator and NGC In respect of outages of Gensets ~~Large Power Stations (both Embedded and non-Embedded)~~ and in respect of outages of other Plant and/or Apparatus directly connected to the GB Transmission System'

- OC2.4.1.2.1 (a) (i) currently states 'a provisional Genset outage programme (covering both Embedded and non-Embedded Large Power Stations)'. Ofgem/DTI propose that this should be amended to: 'a provisional Genset outage programme (covering ~~both Embedded and non-~~ all non-Embedded Power Stations and Embedded Large Power Stations)'

5. Interconnector provisions in the GBGC

Introduction

5.1. In the May 2004 GBGC consultation paper, Ofgem/DTI noted that the definition of Interconnection Agreements currently refers to agreements between NGC and an Externally Interconnected System Operator and/or an Interconnector User and requested views on whether this needed amendment in the GBGC.

5.2. The term 'Interconnection Agreement' is used throughout the GBGC generally to note that equivalent provisions to those in the Grid Code for other types of transmission system users with respect to Interconnectors are defined in the relevant Interconnection Agreement. In the May 2004 GBGC consultation the drafting of GBGC D2 OC8.3.1 (which deals with the scope of OC8 – Safety Co-ordination), had been amended to reflect that the Interconnection Agreement relevant to safety matters may be with 'relevant persons for the External Interconnection' rather than the Externally Interconnected System Operator.

5.3. In the May 2004 GBGC consultation paper, it was noted that there are a number of definitions from the Scottish Grid Code (SGC) that had not been proposed to be included in the GBGC that related to the Moyle Interconnector but that these definitions would be considered as part of the review of interconnector requirements to be presented in this paper. The following definitions relating to the Moyle interconnector are used in the SGC: Moyle Interconnector, Moyle Interconnector Capacity Holder, Moyle Interconnector Trading System, Moyle Interconnector User and Moyle Schedule Period.

5.4. In the context of OC2 (Operational Planning and Data Provision), four respondents to the September 2003 GBGC consultation did not support retaining the provisions in the SGC with respect to the interconnector; although Ofgem/DTI note that this view related to the SGC obligations relating to the Scottish-England interconnector and generally did not specifically refer to the Moyle interconnector. One of these respondents stated that the retention of the SGC obligations for the Moyle Interconnector seemed inappropriate unless the data requirements associated with this interconnector were genuinely different from other interconnectors. Another of these respondents stated that the SGC interconnector provisions related to the Scotland-England interconnector arrangements and that as the EWGC did not have provisions which support the

trading activities of Users in England and Wales on external systems there seemed no reason to retain the SGC interconnector provisions in the GBGC. Another of these respondents stated that these requirements were only appropriate in the context of how two separate Scottish system operators managed their systems against a fixed transfer with England and Wales whilst Scottish participants were participating in both the England and Wales and the Irish markets. One respondent noted that the EWGC did not cover the collection of information from Interconnector Users; that this had not been required historically due to NGC's relationship with the interconnector asset owners; that NGC had received information on England and Wales' interconnectors through other routes as it was an asset owner of both existing interconnectors; and that this relationship would not exist in relation to the Moyle interconnector. This respondent noted that the treatment of the Moyle interconnector should be considered as a regional difference in the GBGC and proposed that the existing provisions in the SGC should be included in the GBGC. This respondent noted that such a regional difference would need to be reflected in a number of sub-codes of the Grid Code (eg Connection Conditions (CCs), Planning Code (PC) and Data Registration Code (DRC)).

5.5. Ofgem/DTI noted that the EWGC did not generally include provisions relating to interconnectors and noted the view that this is because of NGC's role in asset ownership in respect of the existing interconnector circuits and that information for these interconnectors has usually been obtained by way of other agreements. Ofgem/DTI note that respondents who were opposed to the retention of the interconnector provisions as a regional difference had not considered that the GB system operator did not necessarily have an alternative means of obtaining data on the Moyle interconnector. Ofgem/DTI consider that it is generally more transparent and therefore preferable for such arrangements to be included in the Grid Code and agreed to review the existing SGC Moyle interconnector provisions for inclusion in the GBGC.

Discussion

5.6. Ofgem/DTI have further reviewed the changes proposed to GBGC D2 OC8.3.1 contained in the May 2004 GBGC consultation and consider that the proposed revision to GBGC D2 OC8.3.1 is not consistent with the definition of Interconnection Agreement. Ofgem/DTI intend to review this matter further in light of responses to the May 2004 GBGC consultation and will address any

consistency points that arise from their decision about GBGC OC8.3.1 as part of the development of draft 3 of the GBGC.

5.7. Ofgem/DTI have considered the definitions in the SGC (set out in paragraph 5.3), the SGC obligations that use these definitions and the views that have been provided by respondents to previous GBGC consultations.

5.8. In the SGC, Moyle Interconnector provisions appear in the CCs (provision of electronic data facilities); OC2 (submitting transfer data at 16:00 on Thursdays for applicable spot periods for the next 8 weeks ahead); Scheduling and Despatch Code 1 (SDC1) (activities to resolve the capacity of the Moyle interconnector and scheduling) and SDC2 (instructed transfers). Ofgem/DTI note that under the Balancing and Settlement Code (BSC), all trading parties on an interconnector are allocated two Interconnector BM Units (Balancing Mechanism Units)[3]; a Production BM Unit and a Consumption BM Unit. The BSC then requires parties to submit data in accordance with the requirements on BM Units set out in the Grid Code[4]. Therefore Ofgem/DTI consider that the proposed GBGC already includes the equivalent of the requirements set out in the CCs, SDC1 and SDC2 of the SGC.

5.9. Ofgem/DTI understand that equivalent data to that submitted under SGC OC2 for the existing Scotland-England interconnector, is exchanged between transmission licensees under the British Grid Systems Agreement and for the France-England interconnector is provided to NGC in accordance with the 'protocol agreement'. Ofgem/DTI note that SGC OC2 5.19, in the section entitled 'weekly planning', provides for: 'By 16.00 on Thursday for the applicable spot periods: (f) each Moyle Interconnector User shall submit directly to the Company a programme of its proposed transfers of power across the Moyle Interconnector.'

[3] BSC Section K 5.5.3 to K 5.5.5.
[4] BSC Section Q 1.2.2.

Views invited

5.10. No changes are proposed to GBGC D2 in relation to the Moyle Interconnector at this stage but this will be considered further by Ofgem/DTI in light of responses to this consultation. Views are invited on the need for the GB system operator to receive planning data about the Moyle interconnector to support the outage planning process set out in GBGC OC2.

6. Load Management Blocks in the GBGC

Introduction

6.1. Load Management Blocks are defined in the SGC as 'A block of Demand controlled by a Supplier or other party through the means of Radio Teleswitching or by some other means'; there is no equivalent definition in the EWGC.

6.2. In response to the September 2003 GBGC consultation, one respondent considered it appropriate to retain SGC OC2 5.19 for Suppliers to provide information on teleswitching Load Management Blocks and thought that this should apply to GB. Another respondent noted two main reasons for Suppliers notifying Load Management Blocks to a transmission licensee which were for tie-line control purposes and system security purposes. This respondent thought that it might be appropriate to retain the existing SGC requirement where there were system security considerations and advised that if such an obligation was proposed as a regional difference to the GBGC then the scope of the obligation should be limited to the provision of information which is strictly necessary to operate the transmission system. Another respondent did not believe that there was any need to retain this SGC obligation considering that the size of the load management blocks would be immaterial in the context of balancing an integrated GB system. Another respondent stated that they understood that Load Management Blocks had a significant role in the operation of the transmission system in Scotland and that the exchange of information relating to them should be maintained in the GBGC. This respondent thought that it might be more appropriate to place such provisions in OC1.

6.3. Ofgem/DTI stated in the May 2004 GBGC consultation that they understood that considerable use was made of Load Management Blocks in Scotland and in light of this believed that it was appropriate to retain this type of information provision obligations in the GBGC. Ofgem/DTI noted that under BETTA load management blocks would no longer be instructed by a transmission licensee for the control of tie-line transfers.

Discussion

6.4. There are provisions relating to Load Management Blocks in SGC OC2 (Operational Planning and Data Provision), OC8 (Operational Event Reporting and Information Supply), SDC1 (System Scheduling) and SDC2 (Control Scheduling and Despatch) and the Glossary and Definitions of the SGC. Ofgem/DTI have compared these SGC provisions with provisions proposed for the GBGC and note that information would be provided to the GB system operator in respect of Physical Notifications (PNs) submitted in accordance with the GBGC BCs but this information will only be on a Supplier BM Unit basis.

6.5. The SGC OC2 provision relating to load management blocks (SGC OC2 5.19) is in the section entitled 'weekly planning' and requires, 'By 16.00 on Thursday for the applicable spot periods (b) each Supplier who controls a Load Management Block of demand with a capacity of 5 MW or more shall submit to the Company a schedule of its proposed switching times and profiles in respect of each block.' Suppliers are included in the scope of SGC OC8 (Operational Event Reporting and Information Supply).

6.6. The SGC SDC provisions relating to load management blocks are:

- SGC SDC1 6.1.2 'By 14.00 on Day-2 (b) each Supplier who controls a Load Management Block of demand with a capacity of 5 MW or more shall submit to the Company a schedule of its proposed switching times and profiles in respect of each block.'

- SGC SDC1 7.15 'By 11.00 on Day-1 each Supplier who controls a Load Management Block of demand with a capacity of 5 MW or more shall submit to the Company a schedule of its proposed switching times and profiles in respect of each block.'

- SGC SDC1 9(c) 'By 16.30 hours on Day-1, or such time as soon afterwards as is possible, the Company will finalise and issue a system schedule which shall include:(c) information to each Supplier who controls Load Management Blocks about any changes to their operation'

- SGC SDC2 7.2(b) 'Instructions may include: (b) a requirement to reschedule Load Management Blocks with a capacity of 5MW or more. Rescheduling requirements may arise from: system constraints on the

network; a requirement to match generation, Interconnector transfers and Demand on a continual basis'

- SGC SDC2 7.4 'Each Supplier shall immediately inform the Company of any change, and expected duration, to its schedule of switching times and profiles for any Load Management Blocks with a capacity of 5 MW. All changes shall be made and notified more than three and a half hours ahead of the time they are due to come into effect.

Views invited

6.7. Ofgem/DTI invite views on the need to include equivalent provisions as regional differences for Scotland in the GBGC, the timescales in which the information would be required and the appropriate sections of the GBGC for any information provision obligations that are considered necessary.

7. Data Registration Code – Regional Differences

Introduction

7.1. In the May 2004 GBGC consultation, Ofgem/DTI reported that one respondent had noted that Ofgem/DTI had not proposed any regional differences in the DRC. This respondent noted that GCEG had identified a number of minor differences as part of the work in comparing the obligations of the existing Grid Codes which were considered as appropriate for proposal as regional differences in the GBGC DRC. This respondent provided an example of one such regional difference noting that the EWGC required time constants in 'short circuit' form as this meets NGC's bespoke power systems analysis software requirements whereas the time constants in open circuit form meet SPT and SHETL's standard power systems analysis software requirements. This respondent noted that the recommendation of GCEG was that the GBGC DRC should cater for both forms of time constants.

Discussion

7.2. Ofgem/DTI have reviewed the GCEG DRC meeting notes in relation to the discussions about the definition of the time constant information requirement. Ofgem/DTI note that Schedule 1 (Page 4 of 8) of the EWGC DRC specifies that the time constant required is '(short-circuit and unsaturated)' and that the SGC DRC Schedule 2C (Page 1 of 3) does not specify the time constant information required. However, the GCEG notes on the DRC discussions state 'Currently short circuit time constants are required under E&W Grid Code and open circuit time constants under SGC'. Ofgem/DTI invite views as to whether the definitions in the Time Constants section in the GBGC DRC requires a regional difference for Scotland.

7.3. As part of the review, Ofgem/DTI identified a number of other differences between the EWGC DRC and SGC DRC and propose the following changes to GBGCD2 to reflect those differences.

Proposals

7.4. Ofgem/DTI propose the following regional differences to GBGC DRC D2:

- Schedule 1, Page 3 of 8. Add under 'Armature winding direct current resistance': 'In Scotland, Negative sequence resistance' (units: %on MVA). This was identified by GCEG as an existing information requirement of the SGC that would need to be retained in the GBGC

- Schedule 6, change last entry to 'Details of load transfer capability of 12MW or more between Grid Supply Points in England and Wales or 10MW or more between Grid Supply Points in Scotland'

- Schedule 12, Page 1 of 2, change 'Demand Control (averaging ~~12MW~~at the Demand Control Notification Level or more') and change 'Customer Demand Management ~~of 12MW~~ at the Customer Demand Management Notification Level or more'