

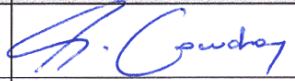

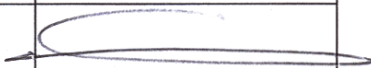


GB Grid Codes for Wind Energy

February Monthly Report

Econnect Project No: 1294

Prepared For	BWEA Renewable Energy House 1 Aztec Row Berners Road London N1 0PW
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	Name	Date	Signature
Prepared By	S. Cowdroy	3/3/2005	
Checked By	A. Oliver	4/3/2005	
Approved By	G. Nicholson	4/3/2005	

Document History		
Issue No	Description	Date
01	Original Document Issue	4/3/2005

Copy No.	Copy Issued To	Company
1	Richard Ford	BWEA
2	Econnect (Client File)	Econnect Ltd
3	Econnect (Project File)	Econnect Ltd

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1 Scope

Econnect is carrying out work for the British Wind Energy Association (BWEA) funded under a contract agreement DG/DTI/00035/00/00 between the Secretary of State for Trade and Industry and the BWEA.

A key deliverable of this contract is a monthly report to the BWEA members on key Grid Code issues and developments. The sixth of these monthly reports is presented in Appendix A in a format suitable for dissemination by the BWEA to its members.

2 Appendix A - GB Grid Code Representation for Wind Energy Monthly Report for February 2005

2.1 Grid Code Consultations

2.1.1 H/04 & SA/2004 Changes to Incorporate New Technologies

Ofgem published their response to these consultations on the 17th January along with the results of their Regulatory Impact Assessment (RIA). Following the recommendations of Ofgem's consultant SKM, a number of supplemental changes have been made to the original proposals, and these changes were part of a consultation that closed on the 28th February. Econnect have consulted with BWEA members to prepare a formal response to this consultation, which was submitted to Ofgem on the 24th February.

The key points raised in the BWEA's response were that: -

- Retrospective implementation of Grid Code changes for any reason is unacceptable.
- Implementation dates must allow time for technology development.
- There is minimal risk to system of delays as all projects approaching completion are reported to have similar requirements in bilateral agreements.
- Ofgem's Impact Assessment has not considered the impact of delaying wind energy. A small delay will increase CO₂ emissions and costs to the consumer.

3 GB Grid Code Review Panel (GB GCRP)

Guy Nicholson attended the latest GB Grid Code review panel meeting, which was held on 24th February. Matters of interest that were discussed include: -

3.1.1 Fault Recovery

Guy proposed the formulation of a GCRP sub-group to examine how embedded wind farms respond to faults and voltage and frequency variation on the system. Scottish & Southern Energy (S&SE) had reviewed the events recorded on their Rate of Change of Frequency (ROCOF) register over the last five years and had found no evidence of tripping of embedded generation. It was noted however that the Distributed Network Operators do not necessarily have the data to determine whether power stations have tripped as they do not have real time / short term data at the Grid Supply Points (only half hourly data), although National Grid Company (NGC) will have real time data for power stations >5MW in S&SE area, >30MW in Scottish Power (SP) area, and >100MW in NGC area. It was agreed that this was an important issue especially in relation to wind power and a sub-group comprising Guy and representatives from each of the three Transmission Owners was duly created.

3.1.2 Governance of Electrical Standards Proposal GCRP 05/03

The proposal by National Grid Company (NGC) to review all standards currently listed and extract all relevant clauses that relate to generator connections in order to put these into a single standard was welcomed by generators.

Guy Nicholson raised the issue of how governance of the electrical standards interacts with competition in connection and in particular the need for clarity as to what the requirements were when the network operator would be adopting the relevant assets. It was acknowledged that with the advent of super shallow 'PLUGs' connection charging this was less of an issue for generation connections to the transmission system.

3.1.3 BETTA Transitional Issues

It was noted that the H/04 consultation will affect small generators particularly in Scotland, although there is currently no way to enforce the Grid Code except through CUSC parties, which could result in some problematic derogations. However NGC are working with the Distribution Code (See Section 4) to enable Grid Code requirements to be passed through. NGC have a one-year dispensation to allow implementation of the Grid Code on medium power stations (who are CUSC parties).

4 License Exempt Embedded Power Stations Working Group (LEEMPSWG)

A meeting of the LEEMPSWG was held on 28th January and was attended by Guy Nicholson. The LEEMPSWG's aim is to remove the necessity for 50-100MW Licence exempt generators to have a Bilateral Agreement (LEGA Licensed Exempt Generation Agreement) with NGC. It is proposed that changing the Distribution Code in order to pass through the relevant requirements of the Grid Code will facilitate this. The Distribution Network Operator can then police the requirements.

Probably the largest number of LEEMPS are in Southern Scotland in the 5-30MW range (including five windarms i.e. Hare Hill, Hagshaw Hill, Dun Law, Windy Standard & Ardrossan). Most of these power stations are assumed not to have any of the proposed or existing GB Grid Code capabilities, and NGT stated that they would seek derogations from the requirements for these stations, as the system operates quite successfully under the current arrangements.

There are no Medium Power Stations in the North of Scotland as they are either Small (<5MW) or Large (>5MW). The present arrangements will mean that the Large Power Stations will still have a Bilateral Agreement with NGT even when they are embedded in the Distribution Network.

Operating Code 5 of the Grid Code deals with Testing and Monitoring. NGT stated that there would be no ongoing monitoring of Medium Power Stations once they were satisfied that the Connection Conditions had been met. Therefore it was agreed that the requirements to demonstrate compliance should be explicitly written in Operating Code 5.

If the tests impose costs on the generator (including loss of ROCs) it is proposed that these are to be reimbursed by NGT through the Distribution Network Operator (DNO), as the DNO is obliged by the Connection Use of System Code (CUSC) to use reasonable endeavors to secure testing.

The Grid Code, CUSC and Distribution Code drafting by the Working Group is under further review due to other industry changes taking place. The next drafting will have to take account of the current Grid Code modification proposals for new generation technologies consultation¹. The plan is for the proposed changes to be considered at the next LEEMPSWG on 14th March and presented at the GB Grid Code Review Panel on 19th May, from where they will go out to consultation.

5 GB Grid Code Revisions

The GB Grid Code (Issue 3) came into effect on 1st September 2004 at the beginning of the BETTA transition period that will extend until the BETTA go-live date of 1st April 2005. Most of the provisions in the GB Grid Code that relate to Scotland are 'switched off' until the go-live date, as the Scottish Grid code remains in effect until that time, however Ofgem retain the right to activate any of these provisions as they see fit during the transition period.

There have been five minor revisions to the GB Grid Code since 1st September.

a) *Grid Code Issue 3 Revision 1 Effective from the 4th October 2004*

Revision 1 is modified as a result of Consultation F/04 (Development of Maximum Generation Service). Basically the change is that this service will now be utilised in accordance with the terms of the CUSC rather than the Maximum Generation Service Agreement.

b) *Grid Code Issue 3 Revision 2 Effective from the 11th October 2004*

Revision 2 is modified as a result of Consultations A/04 (Changes to Data Validation, Consistency, and Defaulting Rules) and G/04 (Changes to Operating Codes 1 & 2). Both are minor changes and do not appear to have any implications for wind.

c) *Grid Code Issue 3 Revision 3 Effective from the 29th November 2004*

Revision 3 is modified as a result of Consultations F/03 (Changes to Operating Code OC2 – Outage Planning), E/04 (Further changes to Grid Code OC2) and D/04 (Grid code compliance issues with refurbishment of plant). It has also updated the Grid Code to include requirements associated with Cascade Hydro Schemes.

F/03 and E/04, update the obligations to more fully reflect the current practices, changing most pages of OC2. F/03 updates generation and transmission outage planning by clarifying requirements regarding data records and timescales, together with general updates to improve ease of reading and remove redundant text. E/04 clarifies that for the 2 to 49 day ahead period generators should provide National Grid with an estimate of daily output usable forecasts, on a Genset basis.

The changes resulting from D/04, have updated section OC5 "Testing and Monitoring", enabling the addition of a process to check that plant items that have been refurbished or replaced comply with Grid Code requirements, and to demonstrate delivery of Ancillary Services.

Additionally changes have been made to define the Cascade Hydro terms "Cascade Hydro Scheme" and "Cascade Hydro Scheme Matrix". A Cascade Hydro Scheme being defined as:

¹ Proposed Grid Code Modifications H/04 and SA/2004 Impact Assessment OFGEM (JAN 2005)

“Two or more hydro-electric Generating Units, owned or controlled by the same Generator, which are located in the same water catchment area and are at different ordnance datum’s and which depend upon a common source of water for their operation”

Requirements on such schemes have been included in the Planning Code, Connection Conditions, OC2, OC5 and Balancing Codes 1 and 2 sections of the Grid Code.

d) *Grid Code Issue 3 Revision 4 Effective from the 19th January 2005*

The Revision 4 changes arise from the implementation of modifications proposed in Consultation Paper T01/04 for Scottish Generators to provide planning data to NGC in advance of BETTA Go-live,

(Provision of OC2 data under OC2.4.1.2.3(a) and OC2.4.1.2.4.(b))

1. An additional paragraph has been included in the General Conditions (GC.A2.12) to activate OC2.4.1.2.3 (a) and OC2.4.1.2.4 (b) to require Scottish Users to comply with such requirements to send 2 to 52 week, 2 to 7 week and 2 to 14 day Generation forecast data to NGC.

2. The submission in respect of each of the above need only be that data applicable from go-live e.g. the first 2 –14 day submission starting on 22 March 2005 need only include information starting from 1 April 2005.

e) *Grid Code Issue 3 Revision 5 Effective from the 4th February 2005*

The Revision 5 changes arise from the implementation of modifications proposed in Ofgem/DTI Consultation 251/04 (Ofgem/DTI BETTA consultation on outstanding matters concerning the Grid Code under BETTA and associated STC drafting). They deal with a number of issues involving the interaction between the three Transmission Owners, and hence have little impact on Generators. The changes are listed below for information.

1. Glossary and Definitions

- Reinstatement of the definition of GB Transmission System Warning.
- Amendment of Definition of Operational Switching.
- Amendment of definition of Local Joint Restoration Plan.
- Amendment of the definition of Power Island.
- Add definition of Control Engineer
- Add definition of Local Switching Procedure.

2. Planning Code.

- Amend Appendix C to refer to GB Security and Quality of Supply Standard.

3. Connection Conditions

- Add proformas for SHETL and SPT Site Responsibility Schedules in Appendix 1.
- Amendment to Appendix A.

4. Operating Codes

- OC7- Additional text in relation to the procedure in respect of Operational Switching.
- OC8 – Additional text to clarify how safety precautions are established when work on one Transmission System requires Safety Precautions to be established on an adjacent Transmission System or on a User System connected to the Transmission System.
- OC9 – Additional text in respect of the establishment of Local Joint Restoration Plans IN Scotland. Changes reflecting the difference between existing operational practice in respect of Black Start in Scotland and England and Wales and the role of the transmission owner in a Black Start situation in Scotland.

5. General Conditions

- Addition of lists of Electrical Standards for SPT and SHETL.
- Amendment to GC.A2.12