Our Ref:

Your Ref:

Date: 4th March 2005

To: All Recipients of the Serviced Grid Code

Commercial Industry Codes

National Grid Company plc
National Grid Transco House
Warwick Technology Park
Gallows Hill
Warwick
CV34 6DA

Tel No: 01926 656335
Fax No: 01926 656520

Dear Sir/Madam

THE SERVICED GRID CODE – ISSUE 3 REVISION 6

Revision 6 of Issue 3 of the Grid Code has been approved by the Authority for implementation on **4th March 2005**.

I have enclosed the replacement pages that incorporate the agreed changes necessary to update the serviced copies of the Grid Code Issue 3 held by you to Revision 6 standard.

The enclosed note indicates the changes that are necessary to incorporate the pages and also attached is a brief summary of the changes made to the text.

Please note that your Grid Code Servicing arrangements will cease on 31st December 2005 and will not be renewed. If you require e-mail notification of Grid Code updates becoming available on the Industry Information website please forward your e-mail address to:

david.payne@ngtuk.com

The notification will provide a direct link to the update file in .pdf format which you will be able to down load to the folder of your choice.

Yours faithfully

D Payne
Industry Codes

THE GRID CODE – ISSUE 3 REVISION 6

INCLUSION OF REVISED PAGES

Title Page			
Glossary and Definitions	**GD**	**-**	**All Pages**
Operating Codes	**OC5**	**-**	**Contents pages, pages 1 to 6**
Balancing Codes	**BC1**	**-**	**All Pages**
	BC2	**-**	**All Pages**
General Conditions	**GC**	**-**	**Pages 7/8**
Revisions			**Pages 7/8**

NOTE: See Page 1 of the Revisions section of the Grid Code for details of how the revisions are indicated on the pages.

NATIONAL GRID COMPANY plc

THE GRID CODE – ISSUE 3 REVISION 6

SUMMARY OF CHANGES

The changes arise from the implementation of modifications proposed in Ofgem/DTI Consultation **55/05** (Ofgem/DTI BETTA consultation on The Treatment of Embedded Exemptable Large Power Stations under BETTA).

1. Glossary and Definitions

   Amendments to the definitions of:
   - Bilateral Agreement
   - BM Participant
   - Construction Agreement
   - Control Point
   - Physical Notification.
   -

   Addition of definitions of:
   - Exemptable
   - Generating Unit Data

2. Operating Codes

   - OC5 - New section of text indicating how OC5 applies to Embedded Exemptable Large Power Stations.

3. Balancing Codes

   - BC1 - Amended to specifically include Generating Unit and Generating Unit Data

   - BC2 - Amended to specifically include Generating Unit and Generating Unit Data

4. General Conditions

   - Addition of GC.15

THE GRID CODE

Issue 3

Revision 6
4th March 2005

THIS DOCUMENT IS ISSUED BY:-

NATIONAL GRID COMPANY PLC
COMMERCIAL, INDUSTRY CODES UNIT
NATIONAL GRID TRANSCO HOUSE
WARWICK TECHNOLOGY PARK
GALLOWS HILL
WARWICK
CV34 6DA

TEL: 01926 656335

REGISTERED OFFICE: **1-3 Strand**
London
WC2N 5EH

GLOSSARY AND DEFINITIONS
(G & D)

1. In the **Grid Code** the following words and expressions shall, unless the subject matter or context otherwise requires or is inconsistent therewith, bear the following meanings:

Act — The Electricity Act 1989 (as amended by the Utilities Act 2000 and the Energy Act 2004)

Active Energy — The electrical energy produced, flowing or supplied by an electric circuit during a time interval, being the integral with respect to time of the instantaneous power, measured in units of watt-hours or standard multiples thereof, ie:

1000 Wh = 1 kWh
1000 kWh = 1 MWh
1000 MWh = 1 GWh
1000 GWh = 1 TWh.

Active Power — The product of voltage and the in-phase component of alternating current measured in units of watts and standard multiples thereof, ie:

1000 Watts = 1 kW
1000 kW = 1 MW
1000 MW = 1 GW
1000 GW = 1 TW.

Affiliate — In relation to any person, any holding company or subsidiary of such person or any subsidiary of a holding company of such person, in each case within the meaning of Section 736, 736A and 736B of the Companies Act 1985 as substituted by section 144 of the Companies Act 1989 and, if that latter section is not in force at the **Transfer Date**, as if such section were in force at such date.

Ancillary Service — A **System Ancillary Service** and/or a **Commercial Ancillary Service**, as the case may be.

Ancillary Services 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 **Ancillary Services**.

Annual Average Cold Spell Conditions or **ACS Conditions** — A particular combination of weather elements which gives rise to a level of peak **Demand** within a **Financial Year** which has a 50% chance of being exceeded as a result of weather variation alone.

Apparent Power	The product of voltage and of alternating current measured in units of voltamperes and standard multiples thereof, ie: 1000 VA = 1 kVA 1000 kVA = 1 MVA.
Apparatus	Other than in **OC8**, means all equipment in which electrical conductors are used, supported or of which they may form a part. In **OC8** it means **High Voltage** electrical circuits forming part of a **System** on which **Safety Precautions** may be applied to allow work and/or testing to be carried out on a **System**.
Authorised Electricity Operator	Any person (other than **NGC** in its capacity as operator of the **GB Transmission System**) who is authorised under the **Act** to generate, participate in the transmission of, distribute or supply electricity.
Automatic Voltage Regulator or **AVR**	A continuously acting automatic excitation system to control a **Generating Unit** terminal voltage.
Authority for Access	An authority which grants the holder the right to unaccompanied access to sites containing exposed **HV** conductors.
Authority, The	The **Authority** established by section 1 (1) of the Utilities Act 2000
Auxiliaries	Any item of **Plant** and/or **Apparatus** not directly a part of the boiler plant or **Generating Unit**, but required for the boiler plant's or **Generating Unit's** functional operation.
Auxiliary Diesel Engine	A diesel engine driving a **Generating Unit** which can supply a **Unit Board** or **Station Board**, which can start without an electrical power supply from outside the **Power Station** within which it is situated.
Auxiliary Gas Turbine	A **Gas Turbine Unit**, which can supply a **Unit Board** or **Station Board**, which can start without an electrical power supply from outside the **Power Station** within which it is situated.
Average Conditions	That combination of weather elements within a period of time which is the average of the observed values of those weather elements during equivalent periods over many years (sometimes referred to as normal weather).
Back-Up Protection	**Protection** equipment or system which is intended to operate when a system fault is not cleared in due time because of failure or inability of the **Main Protection** to operate or in case of failure to operate of a circuit-breaker other than the associated circuit breaker.

Balancing and Settlement Code or **BSC**	The code of that title as from time to time amended.
Balancing Code or **BC**	That portion of the **Grid Code** which specifies the **Balancing Mechanism** process.
Balancing Mechanism	Has the meaning set out in **NGC's Transmission Licence**
Balancing Mechanism Reporting Agent or **BMRA**	Has the meaning set out in the **BSC**.
Balancing Mechanism Reporting Service or **BMRS**	Has the meaning set out in the **BSC**.
Balancing Principles Statement	A statement prepared by **NGC** in accordance with Condition C16 of **NGC's Transmission Licence**.
Bid-Offer Acceptance	a) A communication issued by **NGC** in accordance with **BC2.7**; or b) an **Emergency Instruction** to the extent provided for in BC2.9.2.3.
Bid-Offer Data	Has the meaning set out in the **BSC**.
Bilateral Agreement	Has the meaning set out in the **CUSC**
Black Start	The procedure necessary for a recovery from a **Total Shutdown** or **Partial Shutdown**.
Black Start Capability	An ability in respect of a **Black Start Station**, for at least one of its **Gensets** to **Start-Up** from **Shutdown** and to energise a part of the **System** and be **Synchronised** to the **System** upon instruction from **NGC**, within two hours, without an external electrical power supply.
Black Start Stations	**Power Stations** which are registered, pursuant to the **Bilateral Agreement** with a **User**, as having a **Black Start Capability**.
Black Start Test	A **Black Start Test** carried out by a **Generator** with a **Black Start Station**, on the instructions of **NGC**, in order to demonstrate that a **Black Start Station** has a **Black Start Capability**.

BM Participant	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**.
BM Unit	Has the meaning set out in the **BSC**, except that for the purposes of the **Grid Code** the reference to "Party" in the **BSC** shall be a reference to **User**.
BM Unit Data	The collection of parameters associated with each **BM Unit**, as described in Appendix 1 of **BC1**.
Boiler Time Constant	Determined at **Registered Capacity**, the boiler time constant will be construed in accordance with the principles of the IEEE Committee Report "Dynamic Models for Steam and Hydro Turbines in Power System Studies" published in 1973 which apply to such phrase.
British Standards or **BS**	Those standards and specifications approved by the British Standards Institution.
BSCCo	Has the meaning set out in the **BSC**.
BSC Panel	Has meaning set out for "Panel" in the **BSC**.
BS Station Test	A **Black Start Test** carried out by a **Generator** with a **Black Start Station** while the **Black Start Station** is disconnected from all external alternating current electrical supplies.
BS Unit Test	A **Black Start Test** carried out on a **Generating Unit** or a **CCGT Unit**, as the case may be, at a **Black Start Station** while the **Black Start Station** remains connected to an external alternating current electrical supply.
Business Day	Any week day (other than a Saturday) on which banks are open for domestic business in the City of London.
Cancellation of GB Transmission System Warning	The notification given to **Users** when a **GB Transmission System Warning** is cancelled.

Cascade Hydro Scheme	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 datums and which depend upon a common source of water for their operation, known as: 1. Moriston 2. Killin 3. Garry 4. Conon 5. Clunie 6. Beauly which will comprise more than one **Power Station.**
Cascade Hydro Scheme Matrix	The matrix described in Appendix 1 to **BC1** under the heading **Cascade Hydro Scheme Matrix.**
Caution Notice	A notice conveying a warning against interference.
CENELEC	European Committee for Electrotechnical Standardisation.
CCGT Module Matrix	The matrix described in Appendix 1 to BC1 under the heading **CCGT Module Matrix**.
CCGT Module Planning Matrix	A matrix in the form set out in Appendix 3 of OC2 showing the combination of **CCGT Units** within a **CCGT Module** which would be running in relation to any given MW output.
Cluster	1. Before Telemetry A cluster of wind turbines will be formed when the total wind capacity within any circle of five kilometre radius has a **Registered Capacity** of not less than 5MW 2. After Telemetry Any wind turbine installed within a five kilometer radius of the anemometer position (whether installed before or after the installation of that anemometer) will be deemed to be within the cluster for that anemometer and will not count towards the creation of any new cluster. All other wind turbines may count towards the creation of further clusters.
Combined Cycle Gas Turbine Module or **CCGT Module**	A collection of **Generating Units** (registered as a **CCGT Module** under the PC) comprising one or more **Gas Turbine Units** (or other gas based engine units) and one or more **Steam Units** where, in normal operation, the waste heat from the **Gas Turbines** is passed to the water/steam system of the associated **Steam Unit** or **Steam Units** and where the component units within the **CCGT Module** are directly connected by steam or hot gas lines which enable those units to contribute to the efficiency of the combined cycle operation of the **CCGT Module**.

Combined Cycle Gas Turbine Unit or **CCGT Unit**	A **Generating Unit** within a **CCGT Module**.
Commercial Ancillary Services	**Ancillary Services**, other than **System Ancillary Services**, utilised by **NGC** in operating the **Total System** if a **User** (or other person) has agreed to provide them under an **Ancillary Services Agreement** or under a **Bilateral Agreement** with payment being dealt with under an **Ancillary Services Agreement** or in the case of **Externally Interconnected System Operators** or **Interconnector Users**, under any other agreement (and in the case of **Externally Interconnected System Operators** and **Interconnector Users** includes ancillary services equivalent to or similar to **System Ancillary Services**).
Committed Project Planning Data	Data relating to a **User Development** once the offer for a **CUSC Contract** is accepted.
Completion Date	Has the meaning set out in the **Bilateral Agreement** with each **User** to that term or in the absence of that term to such other term reflecting the date when a **User** is expected to connect to or start using the **GB Transmission System**.
Complex	A **Connection Site** together with the associated **Power Station** and/or **Network Operator** substation and/or associated **Plant** and/or **Apparatus**, as appropriate.
Connection Conditions or **CC**	That portion of the **Grid Code** which is identified as the **Connection Conditions**.
Connection Entry Capacity	Has the meaning set out in the **CUSC**
Connected Planning Data	Data which replaces data containing estimated values assumed for planning purposes by validated actual values and updated estimates for the future and by updated forecasts for **Forecast Data** items such as **Demand**.
Connection Point	A **Grid Supply Point** or **Grid Entry Point**, as the case may be.
Connection Site	A **Transmission Site** or **User Site**, as the case may be.
Construction Agreement	Has the meaning set out in the **CUSC**

Contingency Reserve The margin of generation over forecast **Demand** which is required in the period from 24 hours ahead down to real time to cover against uncertainties in **Large Power Station** availability and against both weather forecast and **Demand** forecast errors.

Control Calls A telephone call whose destination and/or origin is a key on the control desk telephone keyboard at a **Transmission Control Centre** and which has the right to exercise priority over (ie. disconnect) a call of a lower status.

Control Centre A location used for the purpose of control and operation of the **GB Transmission System** or a **User System** other than a **Generator's System** or an **External System**.

Control Engineer A person nominated by the relevant party for the control of its **Plant** and **Apparatus**.

Control Person The term used as an alternative to "**Safety Co-ordinator**" on the **Site Responsibility Schedule** only.

Control Phase The **Control Phase** follows on from the **Programming Phase** and covers the period down to real time.

Control Point The point from which:-

a) A **Non-Embedded Customer's Plant** and **Apparatus** is controlled; or

b) A **BM Unit** at a **Large Power Station** or at a **Medium Power Station** or representing a **Cascade Hydro Scheme** or with a **Demand Capacity** with a magnitude of 50MW or more (in England and Wales) or 5MW or more (in Scotland), is physically controlled by a **BM Participant**; or

c) In the case of any other **BM Unit** or **Generating Unit**, data submission is co-ordinated for a **BM Participant** and instructions are received from **NGC**,

as the case may be. For a **Generator** this will normally be at a **Power Station**. In the case of a **BM Unit** of an **Interconnector User**, the **Control Point** will be the **Control Centre** of the relevant **Externally Interconnected System Operator**.

Control Telephony The method by which a **User's Responsible Engineer/Operator** and **NGC Control Engineer(s)** speak to one another for the purposes of control of the **Total System** in both normal and emergency operating conditions.

CUSC Has the meaning set out in **NGC's Transmission Licence**

CUSC Contract	One or more of the following agreements as envisaged in Standard Condition C1 of **NGC's Transmission Licence**: (a) the **CUSC Framework Agreement**; (b) a **Bilateral Agreement**; (c) a **Construction Agreement** or a variation to an existing **Bilateral Agreement** and/or **Construction Agreement**;
CUSC Framework Agreement	Has the meaning set out in **NGC's Transmission Licence**
Customer	A person to whom electrical power is provided (whether or not he is the same person as the person who provides the electrical power).
Customer Demand Management	Reducing the supply of electricity to a **Customer** or disconnecting a **Customer** in a manner agreed for commercial purposes between a **Supplier** and its **Customer**.
Customer Demand Management Notification Level	The level above which a **Supplier** has to notify **NGC** of its proposed or achieved use of **Customer Demand Management** which is 12 MW in England and Wales and 5 MW in Scotland.
Customer Generating Plant	A **Power Station** or **Generating Unit** of a **Customer** to the extent that it operates the same exclusively to supply all or part of its own electricity requirements, and does not export electrical power to any part of the **Total System**.
Data Registration Code or **DRC**	That portion of the **Grid Code** which is identified as the **Data Registration Code**.
Data Validation, Consistency and Defaulting Rules	The rules relating to validity and consistency of data, and default data to be applied, in relation to data submitted under the **Balancing Codes**, to be applied by **NGC** under the **Grid Code** as set out in the document "Data Validation, Consistency and Defaulting Rules" - Issue 7, dated 11th October 2004. The document is available on the National Grid website or upon request from **NGC**.
De-Load	The condition in which a **Genset** has reduced or is not delivering electrical power to the **System** to which it is **Synchronised**.
Demand	The demand of MW and Mvar of electricity (i.e. both **Active** and **Reactive Power**), unless otherwise stated.
Demand Capacity	Has the meaning as set out in the **BSC**.

Demand Control	Any or all of the following methods of achieving a **Demand** reduction: (a) **Customer** voltage reduction initiated by **Network Operators** (other than following an instruction from **NGC**); (b) **Customer Demand** reduction by **Disconnection** initiated by **Network Operators** (other than following an instruction from **NGC**); (c) **Demand** reduction instructed by **NGC**; (d) automatic low **Frequency Demand Disconnection**; (e) emergency manual **Demand Disconnection**.
Demand Control Notification Level	The level above which a **Network Operator** has to notify **NGC** of its proposed or achieved use of **Demand Control** which is 12 MW in England and Wales and 5 MW in Scotland.
Designed Minimum Operating Level	The output (in whole MW) below which a **Genset** has no **High Frequency Response** capability.
De-Synchronise	a) The act of taking a **Generating Unit** off a **System** to which it has been **Synchronised**, by opening any connecting circuit breaker; or b) The act of ceasing to consume electricity at an importing **BM Unit**; and the term "**De-Synchronising**" shall be construed accordingly.
De-synchronised Island(s)	Has the meaning set out in OC9.5.1(a)
Detailed Planning Data	Detailed additional data which **NGC** requires under the **PC** in support of **Standard Planning Data**. Generally it is first supplied once a **Bilateral Agreement** is entered into.
Discrimination	The quality where a relay or protective system is enabled to pick out and cause to be disconnected only the faulty **Apparatus**.
Disconnection	The physical separation of **Users** (or **Customers**) from the **GB Transmission System** or a **User System** as the case may be.
Disputes Resolution Procedure	The procedure described in the **CUSC** relating to disputes resolution.
Distribution Code	The distribution code required to be drawn up by each **Electricity Distribution Licence** holder and approved by the **Authority**, as from time to time revised with the approval of the **Authority**.

Dynamic Parameters Those parameters listed in Appendix 1 to **BC1** under the heading **BM Unit Data** – **Dynamic Parameters**.

Earth Fault Factor At a selected location of a three-phase **System** (generally the point of installation of equipment) and for a given **System** configuration, the ratio of the highest root mean square phase-to-earth power **Frequency** voltage on a sound phase during a fault to earth (affecting one or more phases at any point) to the root mean square phase-to-earth power **Frequency** voltage which would be obtained at the selected location without the fault.

Earthing A way of providing a connection between conductors and earth by an **Earthing Device** which is either:

(a) Immobilised and **Locked** in the earthing position. Where the **Earthing Device** is **Locked** with a **Safety Key**, the **Safety Key** must be secured in a **Key Safe** and the **Key Safe Key** must be retained in safe custody: or

(b) maintained and/or secured in position by such other method which must be in accordance with the **Local Safety Instructions** of **NGC** or the **Safety Rules** of the **Relevant Transmission Licensee** or that **User**, as the case may be.

Earthing Device A means of providing a connection between a conductor and earth being of adequate strength and capability.

Electrical Standard A standard listed in the Annex to the **General Conditions**.

Electricity Council That body set up under the Electricity Act, 1957.

Electricity Distribution Licence The licence granted pursuant to Section 6(1) (c) of the **Act.**

Electricity Supply Industry Arbitration Association The unincorporated members' club of that name formed inter alia to promote the efficient and economic operation of the procedure for the resolution of disputes within the electricity supply industry by means of arbitration or otherwise in accordance with its arbitration rules.

Electricity Supply Licence The licence granted pursuant to Section 6(1) (d) of the **Act.**

Electromagnetic Compatibility Level Has the meaning set out in **Engineering Recommendation** G5/4.

Embedded	Having a direct connection to a **User System** or the **System** of any other **User** to which **Customers** and/or **Power Stations** are connected, such connection being either a direct connection or a connection via a busbar of another **User** or of a **Transmission Licensee** (but with no other connection to the **GB Transmission System**).
Emergency Instruction	An instruction issued by **NGC** in emergency circumstances, pursuant to BC2.9, to the **Control Point** of a **User**. In the case of such instructions applicable to a **BM Unit**, it may require an action or response which is outside the **Dynamic Parameters**, **QPN** or **Other Relevant Data**, and may include an instruction to trip a **Genset**.
Engineering Recommendations	The documents referred to as such and issued by the Electricity Association or the former Electricity Council.
Estimated Registered Data	Those items of **Standard Planning Data** and **Detailed Planning Data** which either upon connection will become **Registered Data**, or which for the purposes of the **Plant** and/or **Apparatus** concerned as at the date of submission are **Registered Data**, but in each case which for the seven succeeding **Financial Years** will be an estimate of what is expected.
European Specification	A common technical specification, a **British Standard** implementing a European standard or a European technical approval. The terms "common technical specification", "European standard" and "European technical approval" shall have the meanings respectively ascribed to them in the **Regulations**.
Event	An unscheduled or unplanned (although it may be anticipated) occurrence on, or relating to, a **System** (including **Embedded Power Stations**) including, without limiting that general description, faults, incidents and breakdowns and adverse weather conditions being experienced.
Exciter	The source of the electrical power providing the field current of a synchronous machine.
Excitation System	The equipment providing the field current of a machine, including all regulating and control elements, as well as field discharge or suppression equipment and protective devices.
Excitation System No-Load Negative Ceiling Voltage	The minimum value of direct voltage that the **Excitation System** is able to provide from its terminals when it is not loaded, which may be zero or a negative value.
Excitation System Nominal Response	Shall have the meaning ascribed to that term in **IEC** 34-16-1:1991 [equivalent to **British Standard BS**4999 Section 116.1 : 1992]. The time interval applicable is the first half-second of excitation system voltage response.

Excitation System On-Load Positive Ceiling Voltage

Shall have the meaning ascribed to the term 'Excitation system on load ceiling voltage' in **IEC** 34-16-1:1991[equivalent to **British Standard BS**4999 Section 116.1 : 1992].

Excitation System No-Load Positive Ceiling Voltage

Shall have the meaning ascribed to the term 'Excitation system no load ceiling voltage' in **IEC** 34-16-1:1991[equivalent to **British Standard BS**4999 Section 116.1 : 1992].

Exemptable

Has the meaning set out in the **CUSC**.

Existing AGR Plant

The following nuclear advanced gas cooled reactor plant (which was commissioned and connected to the **Total System** at the **Transfer Date**):-

Dungeness B
Hinkley Point B
Heysham 1
Heysham 2
Hartlepool
Hunterston B
Torness.

Existing AGR Plant Flexibility Limit

In respect of each **Genset** within each **Existing AGR Plant** which has a safety case enabling it to so operate, 8 (or such lower number which when added to the number of instances of reduction of output as instructed by **NGC** in relation to operation in **Frequency Sensitive Mode** totals 8) instances of flexibility in any calendar year (or such lower or greater number as may be agreed by the Nuclear Installations Inspectorate and notified to **NGC**) for the purpose of assisting in the period of low **System NRAPM** and/or low **Localised NRAPM** provided that in relation to each **Generating Unit** each change in output shall not be required to be to a level where the output of the reactor is less than 80% of the reactor thermal power limit (as notified to **NGC** and which corresponds to the limit of reactor thermal power as contained in the "Operating Rules" or "Identified Operating Instructions" forming part of the safety case agreed with the Nuclear Installations Inspectorate).

Existing Gas Cooled Reactor Plant

Both **Existing Magnox Reactor Plant** and **Existing AGR Plant**.

Existing Magnox Reactor Plant

The following nuclear gas cooled reactor plant (which was commissioned and connected to the **Total System** at the **Transfer Date**):-

Calder Hall
Chapelcross
Dungeness A
Hinkley Point A
Oldbury-on-Severn
Bradwell
Sizewell A
Wylfa.

Export and Import Limits	Those parameters listed in Appendix 1 to **BC1** under the heading **BM Unit Data** – **Export and Import Limits**.
External Interconnection	**Apparatus** for the transmission of electricity to or from the **GB Transmission System** or a **User System** into or out of an **External System**. For the avoidance of doubt, a single **External Interconnection** may comprise several circuits operating in parallel.
Externally Interconnected System Operator or **EISO**	A person who operates an **External System** which is connected to the **GB Transmission System** or a **User System** by an **External Interconnection**.
External System	In relation to an **Externally Interconnected System Operator** means the transmission or distribution system which it owns or operates which is located outside **Great Britain** and any **Apparatus** or **Plant** which connects that system to the **External Interconnection** and which is owned or operated by such **Externally Interconnected System Operator**.
Fault Current Interruption Time	The time interval from fault inception until the end of the break time of the circuit breaker (as declared by the manufacturers).
Fast Start	A start by a **Genset** with a **Fast Start Capability**.
Fast Start Capability	The ability of a **Genset** to be **Synchronised** and **Loaded** up to full **Load** within 5 minutes.
Final Generation Outage Programme	An outage programme as agreed by **NGC** with each **Generator** at various stages through the **Operational Planning Phase** and **Programming Phase** which does not commit the parties to abide by it, but which at various stages will be used as the basis on which **GB Transmission System** outages will be planned.
Final Physical Notification Data	Has the meaning set out in the **BSC**.
Final Report	A report prepared by the **Test Proposer** at the conclusion of a **System Test** for submission to **NGC** (if it did not propose the **System Test**) and other members of the **Test Panel**.
Financial Year	Bears the meaning given in Condition A1 (Definitions and Interpretation) of **NGC's Transmission Licence**.

Flicker Severity (Long Term)	A value derived from 12 successive measurements of **Flicker Severity** (**Short Term**) (over a two hour period) and a calculation of the cube root of the mean sum of the cubes of 12 individual measurements, as further set out in **Engineering Recommendation** P28 as current at the **Transfer Date**.
Flicker Severity (Short Term)	A measure of the visual severity of flicker derived from the time series output of a flickermeter over a 10 minute period and as such provides an indication of the risk of **Customer** complaints.
Forecast Data	Those items of **Standard Planning Data** and **Detailed Planning Data** which will always be forecast.
Frequency	The number of alternating current cycles per second (expressed in Hertz) at which a **System** is running.
Frequency Sensitive AGR Unit	Each **Generating Unit** in an **Existing AGR Plant** for which the **Generator** has notified **NGC** that it has a safety case agreed with the Nuclear Installations Inspectorate enabling it to operate in **Frequency Sensitive Mode**, to the extent that such unit is within its **Frequency Sensitive AGR Unit Limit**. Each such **Generating Unit** shall be treated as if it were operating in accordance with BC3.5.1 provided that it is complying with its **Frequency Sensitive AGR Unit Limit**.
Frequency Sensitive AGR Unit Limit	In respect of each **Frequency Sensitive AGR Unit**, 8 (or such lower number which when added to the number of instances of flexibility for the purposes of assisting in a period of low **System** or **Localised NRAPM** totals 8) instances of reduction of output in any calendar year as instructed by **NGC** in relation to operation in **Frequency Sensitive Mode** (or such greater number as may be agreed between **NGC** and the **Generator**), for the purpose of assisting with **Frequency** control, provided the level of operation of each **Frequency Sensitive AGR Unit** in **Frequency Sensitive Mode** shall not be outside that agreed by the Nuclear Installations Inspectorate in the relevant safety case.
Frequency Sensitive Mode	A **Genset** operating mode which will result in **Active Power** output changing, in response to a change in **System Frequency**, in a direction which assists in the recovery to **Target Frequency**, by operating so as to provide **Primary Response** and/or **Secondary Response** and/or **High Frequency Response**.
Fuel Security Code	The document of that title designated as such by the **Secretary of State**, as from time to time amended.
Gas Turbine Unit	A **Generating Unit** driven by a gas turbine (for instance by an aero-engine).

Gas Zone Diagram

A single line diagram showing boundaries of, and interfaces between, gas-insulated **HV Apparatus** modules which comprise part, or the whole, of a substation at a **Connection Site**, together with the associated stop valves and gas monitors required for the safe operation of the **GB Transmission System** or the **User System**, as the case may be.

Gate Closure

Has the meaning set out in the **BSC**.

GB National Demand

The amount of electricity supplied from the **Grid Supply Points** plus:-

- that supplied by **Embedded Large Power Stations**, and
- **GB Transmission System Losses**,

minus:-

- the **Demand** taken by **Station Transformers** and **Pumped Storage Units'**

and, for the purposes of this definition, does not include:-

- any exports from the **GB Transmission System** across **External Interconnections.**

GB Transmission System

The system consisting (wholly or mainly) of high voltage electric lines owned or operated by **Transmission Licensees** within **Great Britain** and used for the transmission of electricity from one **Power Station** to a sub-station or to another **Power Station** or between sub-stations or to or from any **External Interconnection**, and includes any **Plant** and **Apparatus** and meters owned or operated by any **Transmission Licensee** within **Great Britain** in connection with the transmission of electricity but does not include any **Remote Transmission Assets**.

GB Transmission System Demand

The amount of electricity supplied from the **Grid Supply Points** plus:-

- that supplied by **Embedded Large Power Stations**, and
- exports from the **GB Transmission System** across **External Interconnections**, and
- **GB Transmission System Losses**,

and, for the purposes of this definition, includes:-

- the **Demand** taken by **Station Transformers** and **Pumped Storage Units.**

GB Transmission System Losses

The losses of electricity incurred on the **GB Transmission System**.

GB Transmission System Study Network Data File	A computer file containing details of transmission plant and **Large Power Stations** and the configuration of the connection between them, together with data on **Demand** and on the **GB Transmission System**. These details, when read together as represented in the file, form **NGC's** view of an appropriate representation of the **GB Transmission System** for technical analysis purposes only. The file will only deal with the **GB Transmission System**
GB Transmission System Warning	A warning issued by **NGC** to **Users** (or to certain **Users** only) in accordance with OC7.4.8.2, which provides information relating to **System** conditions or **Events** and is intended to : (a) alert **Users** to possible or actual **Plant** shortage, **System** problems and/or **Demand** reductions; (b) inform of the applicable period; (c) indicate intended consequences for **Users**; and (d) enable specified **Users** to be in a state of readiness to receive instructions from **NGC**.
GB Transmission System Warning - Demand Control Imminent	A warning issued by **NGC**, in accordance with OC7.4.8.7, which is intended to provide short term notice, where possible, to those **Users** who are likely to receive **Demand** reduction instructions from **NGC** within 30 minutes.
GB Transmission System Warning - High Risk of Demand Reduction	A warning issued by **NGC**, in accordance with OC7.4.8.6, which is intended to alert recipients that there is a high risk of **Demand** reduction being implemented and which may normally result from an inadequate **System Margin**.
GB Transmission System Warning - Inadequate System Margin	A warning issued by **NGC**, in accordance with OC7.4.8.5, which is intended to alert recipients of an inadequate **System Margin** and which if not improved may result in **Demand** reduction being instructed.
GB Transmission System Warning - Risk of System Disturbance	A warning issued by **NGC**, in accordance with OC7.4.8.8, which is intended to alert **Users** of the risk of widespread and serious **System** disturbance which may affect **Users**.
General Conditions or **GC**	That portion of the **Grid Code** which is identified as the **General Conditions**.
Generating Plant Demand Margin	The difference between **Output Usable** and forecast **Demand**.
Generating Unit	Unless otherwise provided in the **Grid Code**, any **Apparatus** which produces electricity, including, for the avoidance of doubt, a **CCGT Unit**.

Generating Unit Data	The **Physical Notification**, **Export and Import Limits and Other Relevant Data** only in respect of each **Generating Unit**: (a) which forms part of the **BM Unit** which represents that **Cascade Hydro Scheme**; at an **Embedded Exemptable Large Power Station**, where **NGC** reasonably requires compliance with relevant provisions of **BC1**/**BC2** on a **Generating Unit** basis and has specified such requirement in the relevant **Bilateral Agreement.**
Generation Capacity	Has the meaning set out in the **BSC**.
Generation Planning Parameters	Those parameters listed in Appendix 2 of **OC2**.
Generator	A person who generates electricity under licence or exemption under the **Act** acting in its capacity as a generator in **Great Britain**.
Generator Performance Chart	A diagram which shows the MW and Mvar capability limits within which a **Generating Unit** will be expected to operate under steady state conditions.
Genset	A **Generating Unit** or **CCGT Module** at a **Large Power Station** or any **Generating Unit** or **CCGT Module** which is directly connected to the **GB Transmission System**.
Good Industry Practice	The exercise of that degree of skill, diligence, prudence and foresight which would reasonably and ordinarily be expected from a skilled and experienced operator engaged in the same type of undertaking under the same or similar circumstances.
Governor Deadband	The total magnitude of the change in steady state speed (expressed as a range of Hz (± x Hz) where "x" is a numerical value) within which there is no resultant change in the position of the governing valves of the speed/load Governing System.
Great Britain or **GB**	Has the meaning set out in Schedule 1 of **NGC's Transmission Licence**.
Grid Code Review Panel or **Panel**	The panel with the functions set out in GC.4.
Grid Entry Point	A point at which a **Generating Unit** or a **CCGT Module** or a **CCGT Unit**, as the case may be, which is directly connected to the **GB Transmission System** connects to the **GB Transmission System**.
Grid Supply Point	A point of supply from the **GB Transmission System** to **Network Operators** or **Non-Embedded Customers**.

High Frequency Response	An automatic reduction in **Active Power** output in response to an increase in **System Frequency** above the **Target Frequency** (or such other level of **Frequency** as may have been agreed in an **Ancillary Services Agreement**). This reduction in **Active Power** output must be in accordance with the provisions of the relevant **Ancillary Services Agreement** which will provide that it will be released increasingly with time over the period 0 to 10 seconds from the time of the **Frequency** increase on the basis set out in the **Ancillary Services Agreement** and fully achieved within 10 seconds of the time of the start of the **Frequency** increase and it must be sustained at no lesser reduction thereafter. The interpretation of the **High Frequency Response** to a + 0.5 Hz frequency change is shown diagrammatically in Figure CC.A.3.3.
High Voltage or **HV**	In England and Wales, a voltage exceeding 650 volts. In Scotland, a voltage exceeding 1000 volts.
HV Generator Connections	**Apparatus** connected at the same voltage as that of the **GB Transmission System**, including **Users'** circuits, the higher voltage windings of **Users'** transformers and associated connection **Apparatus**.
HP Turbine Power Fraction	Ratio of steady state mechanical power delivered by the HP turbine to the total steady state mechanical power delivered by the total steam turbine at **Registered Capacity**.
IEC	International Electrotechnical Commission.
IEC Standard	A standard approved by the International Electrotechnical Commission.
Implementing Safety Co-ordinator	The **Safety Co-ordinator** implementing **Safety Precautions**.
Incident Centre	A centre established by **NGC** or a **User** as the focal point in **NGC** or in that **User**, as the case may be, for the communication and dissemination of information between the senior management representatives of **NGC**, or of that **User**, as the case may be, and the relevant other parties during a **Joint System Incident** in order to avoid overloading **NGC's**, or that **User's**, as the case may be, existing operational/control arrangements.
Indicated Constraint Boundary Margin	The difference between a constraint boundary transfer limit and the difference between the sum of **BM Unit** Maximum Export Limits and the forecast of local **Demand** within the constraint boundary.
Indicated Imbalance	The difference between the sum of **Physical Notifications** for **BM Units** comprising **Generating Units** or **CCGT Modules** and the forecast of **Demand** for the whole or any part of the **System**.

Indicated Margin	The difference between the sum of **BM Unit** Maximum Export Limits submitted and the forecast of **Demand** for the whole or any part of the **System**
Instructor Facilities	A device or system which gives certain **Transmission Control Centre** instructions with an audible or visible alarm, and incorporates the means to return message acknowledgements to the **Transmission Control Centre**
Integral Equipment Test or **IET**	A test on equipment, associated with **Plant** and/or **Apparatus**, which takes place when that **Plant** and/or **Apparatus** forms part of a **Synchronised System** and which, in the reasonable judgement of the person wishing to perform the test, may cause an **Operational Effect**.
Interconnection Agreement	An agreement made between **NGC** and an **Externally Interconnected System Operator** and/or an **Interconnector User** and/or other relevant persons for the **External Interconnection** relating to an **External Interconnection** and/or an agreement under which an **Interconnector User** can use an **External Interconnection**.
Interconnector User	Has the meaning set out in the **BSC**.
Interface Agreement	Has the meaning set out in the **CUSC**.
Intertripping	(a) The tripping of circuit-breaker(s) by commands initiated from **Protection** at a remote location independent of the state of the local **Protection**; or (b) **Operational Intertripping**.
Intertrip Apparatus	**Apparatus** which performs **Intertripping**.
IP Turbine Power Fraction	Ratio of steady state mechanical power delivered by the IP turbine to the total steady state mechanical power delivered by the total steam turbine at **Registered Capacity**.
Isolating Device	A device for achieving **Isolation**.

Isolation

The disconnection of **HV Apparatus** (as defined in OC8A.1.6.2 and OC8B.1.7.2) from the remainder of the **System** in which that **HV Apparatus** is situated by either of the following:

(a) an **Isolating Device** maintained in an isolating position. The isolating position must either be:

(i) maintained by immobilising and **Locking** the **Isolating Device** in the isolating position and affixing a **Caution Notice** to it. Where the **Isolating Device** is **Locked** with a **Safety Key**, the **Safety Key** must be secured in a **Key Safe** and the **Key Safe Key** must be retained in safe custody; or

(ii) maintained and/or secured by such other method which must be in accordance with the **Local Safety Instructions** of **NGC** or the **Safety Rules** of the **Relevant Transmission Licensee** or that **User**, as the case may be; or

(b) an adequate physical separation which must be in accordance with and maintained by the method set out in the **Local Safety Instructions** of **NGC** or the **Safety Rules** of the **Relevant Transmission Licensee** or that **User**, as the case may be.

Joint BM Unit Data

Has the meaning set out in the **BSC**.

Joint System Incident

An **Event** wherever occurring (other than on an **Embedded Medium Power Station** or an **Embedded Small Power Station**) which, in the opinion of **NGC** or a **User**, has or may have a serious and/or widespread effect, in the case of an **Event** on a **User(s) System(s)** (other than on an **Embedded Medium Power Station** or **Embedded Small Power Station**), on the **GB Transmission System**, and in the case of an **Event** on the **GB Transmission System**, on a **User(s) System(s)** (other than on an **Embedded Medium Power Station** or **Embedded Small Power Station**).

Key Safe

A device for the secure retention of keys.

Key Safe Key

A key unique at a **Location** capable of operating a lock, other than a control lock, on a **Key Safe**.

Large Power Station

A **Power Station** in **NGC's Transmission Area** with a **Registered Capacity** of 100MW or more or a **Power Station** in **SPT's Transmission Area** with a **Registered Capacity** of 30MW or more; or a **Power Station** in **SHETL's Transmission Area** with a **Registered Capacity** of 5MW or more.

Licence

Any licence granted to **NGC** or a **Relevant Transmission Licensee** or a **User**, under Section 6 of the **Act**.

Licence Standards

Those standards set out or referred to in Condition C17 of **NGC's Transmission Licence** and/or Condition D3 of a **Relevant Transmission Licensee's Transmission Licence**.

Limited Frequency Sensitive Mode	A mode whereby the operation of the **Genset** is **Frequency** insensitive except when the **System Frequency** exceeds 50.4Hz, from which point **Limited High Frequency Response** must be provided.
Limited High Frequency Response	A response of a **Genset** to an increase in **System Frequency** above 50.4Hz leading to a reduction in **Active Power** in accordance with the provisions of BC3.7.2.
Load	The **Active**, **Reactive** or **Apparent Power**, as the context requires, generated, transmitted or distributed.
Loaded	Supplying electrical power to the **System**.
Load Factor	The ratio of the actual output of a **Generating Unit** to the possible maximum output of that **Generating Unit**.
Load Management Block	A block of **Demand** controlled by a **Supplier** or other party through the means of radio teleswitching or by some other means.
Local Joint Restoration Plan	A plan produced under OC9.4.7.11 detailing the agreed method and procedure by which a **Genset** at a **Black Start Station** (possibly with other **Gensets** at that **Black Start Station**) will energise part of the **Total System** and meet complementary blocks of local **Demand** so as to form a **Power Island**. In Scotland, the plan may also: cover more than one **Black Start Station**; include **Gensets** other than those at a **Black Start Station** and cover the creation of one or more **Power Islands**.
Local Safety Instructions	For safety co-ordination in England and Wales, instructions on each **User Site** and **Transmission Site**, approved by the relevant **NGC** or **User's** manager, setting down the methods of achieving the objectives of **NGC's** or the **User's Safety Rules**, as the case may be, to ensure the safety of personnel carrying out work or testing on **Plant** and/or **Apparatus** on which his **Safety Rules** apply and, in the case of a **User**, any other document(s) on a **User Site** which contains rules with regard to maintaining or securing the isolating position of an **Isolating Device**, or maintaining a physical separation or maintaining or securing the position of an **Earthing Device**.
Local Switching Procedure	A procedure produced under OC7.6 detailing the agreed arrangements in respect of carrying out of **Operational Switching** at **Connection Sites** and parts of the **GB Transmission System** adjacent to those **Connection Sites**.
Localised Negative Reserve Active Power Margin or **Localised NRAPM**	That margin of **Active Power** sufficient to allow transfers to and from a **System Constraint Group** (as the case may be) to be contained within such reasonable limit as **NGC** may determine.

Location	Any place at which **Safety Precautions** are to be applied.
Locked	A condition of **HV Apparatus** that cannot be altered without the operation of a locking device.
Locking	The application of a locking device which enables **HV Apparatus** to be **Locked**.
Low Frequency Relay	Has the same meaning as **Under Frequency Relay**.
Low Voltage or **LV**	In England and Wales a voltage not exceeding 250 volts. In Scotland, a voltage exceeding 50 voltage but not exceeding 1000 volts.
Main Protection	**Protection** equipment or system expected to have priority in initiating either a fault clearance or an action to terminate an abnormal condition in a power system.
Material Effect	An effect causing **NGC** or a **Relevant Transmission Licensee** to effect any works or to alter the manner of operation of **Transmission Plant** and/or **Transmission Apparatus** at the **Connection Site** (which term shall, in this definition and in the definition of "**Modification**" only, have the meaning ascribed thereto in the **CUSC**) or the site of connection or a **User** to effect any works or to alter the manner of operation of its **Plant** and/or **Apparatus** at the **Connection Site** or the site of connection which in either case involves that party in expenditure of more than £10,000.
Maximum Generation Service, MGS	A service utilised by **NGC** in accordance with the **CUSC** and the **Balancing Principles Statement** in operating the **Total System**.
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**.
Medium Power Station	A **Power Station** in **NGC's Transmission Area** with a **Registered Capacity** of 50MW or more, but less than 100MW; or a **Power Station** in **SPT's Transmission Area** with a **Registered Capacity** of 5MW or more, but less than 30MW.
Medium Voltage or **MV**	In England and Wales a voltage exceeding 250 volts but not exceeding 650 volts.
Mills	Milling plant which supplies pulverised fuel to the boiler of a coal fired **Power Station**.

Minimum Generation	The minimum output (in whole MW) which a **Genset** can generate under stable operating conditions, as registered with **NGC** under the **PC** (and amended pursuant to the **PC**). For the avoidance of doubt, the output may go below this level as a result of operation in accordance with BC3.7.
Modification	Any actual or proposed replacement, renovation, modification, alteration or construction by or on behalf of a **User** or **NGC** to either that **User's Plant** or **Apparatus** or **Transmission Plant** or **Apparatus**, as the case may be, or the manner of its operation which has or may have a **Material Effect** on **NGC** or a **User**, as the case may be, at a particular **Connection Site**.
Mothballed Generating Unit	A **Generating Unit** that has previously generated which the **Generator** plans not to use to generate for the remainder of the current **NGC Financial Year** but which could be returned to service.
Multiple Point of Connection	A double (or more) **Point of Connection**, being two (or more) **Points of Connection** interconnected to each other through the **User's System**.
Network Data	The data to be provided by **NGC** to **Users** in accordance with the **PC**, as listed in Part 3 of the Appendix to the **PC**.
Network Operator	A person with a **User System** directly connected to the **GB Transmission System** to which **Customers** and/or **Power Stations** (not forming part of the **User System**) are connected, acting in its capacity as an operator of the **User System**, but shall not include a person acting in the capacity of an **Externally Interconnected System Operator**.
NGC	National Grid Company plc.
NGC Control Engineer	The nominated person employed by **NGC** to direct the operation of the **GB Transmission System** or such person as nominated by **NGC**.
NGC Operational Strategy	**NGC's** operational procedures which form the guidelines for operation of the **GB Transmission System**.
No-Load Field Voltage	Shall have the meaning ascribed to that term in **IEC** 34-16-1:1991 [equivalent to **British Standard BS**4999 Section 116.1 : 1992].
Non-Embedded Customer	A **Customer** in **Great Britain**, except for a **Network Operator** acting in its capacity as such, receiving electricity direct from the **GB Transmission System** irrespective of from whom it is supplied.
Normal CCGT Module	A **CCGT Module** other than a **Range CCGT Module**.
Novel Unit	A tidal, wave, wind, geothermal, or any similar, **Generating Unit**.

OC9 De-synchronised Island Procedure	Has the meaning set out in OC9.5.4.
On-Site Generator Site	A site which is determined by the **BSC Panel** to be a Trading Unit under the **BSC** by reason of having fulfilled the Class 1 or Class 2 requirements as such terms are used in the **BSC**.
Operating Code or **OC**	That portion of the **Grid Code** which is identified as the **Operating Code**.
Operating Margin	**Contingency Reserve** plus **Operating Reserve**.
Operating Reserve	The additional output from **Large Power Stations** or the reduction in **Demand**, which must be realisable in real-time operation to respond in order to contribute to containing and correcting any **System Frequency** fall to an acceptable level in the event of a loss of generation or a loss of import from an **External Interconnection** or mismatch between generation and **Demand**.
Operation	A scheduled or planned action relating to the operation of a **System** (including an **Embedded Power Station**).
Operational Data	Data required under the **Operating Codes** and/or **Balancing Codes**.
Operational Day	The period from 0500 hours on one day to 0500 on the following day.
Operation Diagrams	Diagrams which are a schematic representation of the **HV Apparatus** and the connections to all external circuits at a **Connection Site**, incorporating its numbering, nomenclature and labelling.
Operational Effect	Any effect on the operation of the relevant other **System** which causes the **GB Transmission System** or the **System** of the other **User** or **Users**, as the case may be, to operate (or be at a materially increased risk of operating) differently to the way in which they would or may have operated in the absence of that effect.
Operational Intertripping	The automatic tripping of circuit-breakers to prevent abnormal system conditions occurring, such as over voltage, overload, **System** instability, etc. after the tripping of other circuit-breakers following power **System** fault(s) which includes **System** to **Generating Unit**, **System** to **CCGT Module** and **System** to **Demand** intertripping schemes.

Operational Planning	Planning through various timescales the matching of generation output with forecast **GB Transmission System Demand** together with a reserve of generation to provide a margin, taking into account outages of certain **Generating Units**, of parts of the **GB Transmission System** and of parts of **User Systems** to which **Power Stations** and/or **Customers** are connected, carried out to achieve, so far as possible, the standards of security set out in **NGC's Transmission Licence**, each **Relevant Transmission Licensee's Transmission Licence** or **Electricity Distribution Licence**, as the case may be.
Operational Planning Margin	An operational planning margin set by **NGC**.
Operational Planning Phase	The period from 8 weeks to the end of the 5th year ahead of real time operation.
Operational Procedures	Management instructions and procedures, both in support of the **Safety Rules** and for the local and remote operation of **Plant** and **Apparatus**, issued in connection with the actual operation of **Plant** and/or **Apparatus** at or from a **Connection Site**.
Operational Switching	Operation of **Plant** and/or **Apparatus** to the instruction of the relevant **Control Engineer.** For the avoidance of doubt, the operation of **Transmission Plant** and/or **Apparatus** forming part of the **GB Transmission System** in England and Wales, will be to the instruction of **NGC** and in Scotland will be to the instruction of the **Relevant Transmission Licensee**.
Other Relevant Data	The data listed in BC1.4.2(f) under the heading **Other Relevant Data**
Out of Synchronism	The condition where a **System** or **Generating Unit** cannot meet the requirements to enable it to be **Synchronised**.
Output Usable or **OU**	That portion of **Registered Capacity** which is expected to be available and which is not unavailable due to a **Planned Outage.**
Over-excitation Limiter	Shall have the meaning ascribed to that term in **IEC** 34-16-1:1991 [equivalent to **British Standard BS**4999 Section 116.1 : 1992].
Part 1 System Ancillary Services	**Ancillary Services** which are required for **System** reasons and which must be provided by **Users** in accordance with the **Connection Conditions**. An exhaustive list of **Part 1 System Ancillary Services** is included in that part of CC.8.1 headed Part 1.
Part 2 System Ancillary Services	**Ancillary Services** which are required for **System** reasons and which must be provided by a **User** if the **User** has agreed to provide them under a **Bilateral Agreement**. A non-exhaustive list of **Part 2 System Ancillary Services** is included in that part of CC.8.1 headed Part 2.

Part Load

The condition of a **Genset**, or **Cascade Hydro Scheme** which is **Loaded** but is not running at its Maximum Export Limit.

Permit for Work for proximity work

In England and Wales, a document issued by **NGC** or a **User** in accordance with its respective **Safety Rules** to enable work to be carried out in accordance with OC8A.8 and which provides for **Safety Precautions** to be applied and maintained. An example format of **NGC**'s permit for work is attached as Appendix E to **OC8A**.

In Scotland, a document issued by a **Relevant Transmission Licensee** or a **User** in accordance with its respective **Safety Rules** to enable work to be carried out in accordance with OC8B.8 and which provides for **Safety Precautions** to be applied and maintained. Example formats of the **Relevant Transmission Licensees'** permits for work are attached as Appendix E to **OC8B**.

Partial Shutdown

The same as a **Total Shutdown** except that all generation has ceased in a separate part of the **Total System** and there is no electricity supply from **External Interconnections** or other parts of the **Total System** to that part of the **Total System** and, therefore, that part of the **Total System** is shutdown, with the result that it is not possible for that part of the **Total System** to begin to function again without **NGC's** directions relating to a **Black Start**.

Phase (Voltage) Unbalance

The ratio (in percent) between the rms values of the negative sequence component and the positive sequence component of the voltage.

Physical Notification

Data that describes the **BM Participant**'s best estimate of the expected input or output of **Active Power** of a **BM Unit** and/or (where relevant) **Generating Unit**.

Planning Code or **PC**

That portion of the **Grid Code** which is identified as the **Planning Code**.

Planned Maintenance Outage

An outage of **NGC** electronic data communication facilities as provided for in CC.6.5.8 and **NGC's** associated computer facilities of which normally at least 5 days notice is given, but in any event of which at least twelve hours notice has been given by **NGC** to the **User** and which is anticipated to last no longer than 2 hours. The length of such an outage may in exceptional circumstances be extended where at least 24 hours notice has been given by **NGC** to the **User**. It is anticipated that normally any planned outage would only last around one hour.

Planned Outage

An outage of a **Large Power Station** or of part of the **GB Transmission System**, or of part of a **User System**, co-ordinated by **NGC** under **OC2**.

Plant

Fixed and movable items used in the generation and/or supply and/or transmission of electricity, other than **Apparatus**.

Point of Common Coupling	That point on the **GB Transmission System** electrically nearest to the **User** installation at which either **Demands** or **Loads** are, or may be, connected.
Point of Connection	An electrical point of connection between the **GB Transmission System** and a **User's System**.
Point of Isolation	The point on **Apparatus** (as defined in OC8A.1.6.2 and OC8B.1.7.2) at which **Isolation** is achieved.
Post-Control Phase	The period following real time operation.
Power Factor	The ratio of **Active Power** to **Apparent Power**.
Power Island	**Gensets** at an isolated **Power Station**, together with complementary local **Demand**. In Scotland a **Power Island** may include more than one **Power Station.**
Power Station	An installation comprising one or more **Generating Units** (even where sited separately) owned and/or controlled by the same **Generator**, which may reasonably be considered as being managed as one **Power Station**.
Power System Stabiliser or **PSS**	Equipment controlling the **Exciter** output via the voltage regulator in such a way that power oscillations of the synchronous machines are dampened. Input variables may be speed, frequency or power (or a combination of these).
Preface	The preface to the **Grid Code** (which does not form part of the **Grid Code** and therefore is not binding).
Preliminary Notice	A notice in writing, sent by **NGC** both to all **Users** identified by it under OC12.4.2.1 and to the **Test Proposer**, notifying them of a proposed **System Test**.
Preliminary Project Planning Data	Data relating to a proposed **User Development** at the time the **User** applies for a **CUSC Contract** but before an offer is made and accepted.

Primary Response The automatic increase in **Active Power** output of a **Genset** or, as the case may be, the decrease in **Active Power Demand** in response to a **System Frequency** fall. This increase in **Active Power** output or, as the case may be, the decrease in **Active Power Demand** must be in accordance with the provisions of the relevant **Ancillary Services Agreement** which will provide that it will be released increasingly with time over the period 0 to 10 seconds from the time of the start of the **Frequency** fall on the basis set out in the **Ancillary Services Agreement** and fully available by the latter, and sustainable for at least a further 20 seconds. The interpretation of the **Primary Response** to a – 0.5 Hz frequency change is shown diagrammatically in Figure CC.A.3.2.

Programming Phase The period between **Operational Planning Phase** and the **Control Phase**. It starts at the 8 weeks ahead stage and finishes at 17:00 on the day ahead of real time.

Proposal Notice A notice submitted to **NGC** by a **User** which would like to undertake a **System Test**.

Proposal Report A report submitted by the **Test Panel** which contains:

a) proposals for carrying out a **System Test** (including the manner in which the **System Test** is to be monitored);

b) an allocation of costs (including un-anticipated costs) between the affected parties (the general principle being that the **Test Proposer** will bear the costs); and

c) such other matters as the **Test Panel** considers appropriate.

The report may include requirements for indemnities to be given in respect of claims and losses arising from a **System Test**.

Protection The provisions for detecting abnormal conditions on a **System** and initiating fault clearance or actuating signals or indications.

Protection Apparatus A group of one or more **Protection** relays and/or logic elements designated to perform a specified **Protection** function.

Pumped Storage Generator A **Generator** which owns and/or operates any **Pumped Storage Plant**.

Pumped Storage Plant The Dinorwig, Ffestiniog, Cruachan and Foyers **Power Stations**.

Pumped Storage Unit A **Generating Unit** within a **Pumped Storage Plant**.

Quiescent Physical Notification or **QPN**	Data that describes the MW levels to be deducted from the **Physical Notification** of a **BM Unit** to determine a resultant operating level to which the **Dynamic Parameters** associated with that **BM Unit** apply, and the associated times for such MW levels. The MW level of the **QPN** must always be set to zero.
Range CCGT Module	A **CCGT Module** where there is a physical connection by way of a steam or hot gas main between that **CCGT Module** and another **CCGT Module** or other **CCGT Modules**, which connection contributes (if open) to efficient modular operation, and which physical connection can be varied by the operator.
Rated Field Voltage	Shall have the meaning ascribed to that term in **IEC** 34-16-1:1991 [equivalent to **British Standard BS**4999 Section 116.1 : 1992].
Rated MW	The "rating-plate" MW output of a **Generating Unit**, being that output up to which the **Generating Unit** was designed to operate (Calculated as specified in **British Standard BS** EN 60034 – 1: 1995).
Reactive Energy	The integral with respect to time of the **Reactive Power**.
Reactive Power	The product of voltage and current and the sine of the phase angle between them measured in units of voltamperes reactive and standard multiples thereof, ie: 1000 VAr = 1 kVAr 1000 kVAr = 1 Mvar
Record of Inter-System Safety Precautions or **RISSP**	A written record of inter-system **Safety Precautions** to be compiled in accordance with the provisions of **OC8**.

Registered Capacity

(a) In the case of a **Generating Unit** other than that forming part of a **CCGT Module**, the normal full load capacity of a **Generating Unit** as declared by the **Generator**, less the MW consumed by the **Generating Unit** through the **Generating Unit's Unit Transformer** when producing the same (the resultant figure being expressed in whole MW).

(b) In the case of a **CCGT Module**, the normal full load capacity of a **CCGT Module** as declared by the **Generator**, being the **Active Power** declared by the **Generator** as being deliverable by the **CCGT Module** at the **Grid Entry Point** (or in the case of an **Embedded CCGT Module**, at the **User System Entry Point**), expressed in whole MW.

(c) In the case of a **Power Station**, the maximum amount of **Active Power** deliverable by the **Power Station** at the **Grid Entry Point** (or in the case of an **Embedded Power Station** at the **User System Entry Point**), as declared by the **Generator**, expressed in whole **MW**. The maximum **Active Power** deliverable is the maximum amount deliverable simultaneously by the **Generating Units** and/or **CCGT Modules** less the **MW** consumed by the **Generating Units** and/or **CCGT Modules** in producing that **Active Power**.

Registered Data

Those items of **Standard Planning Data** and **Detailed Planning Data** which upon connection become fixed (subject to any subsequent changes).

Regulations

The Utilities Contracts Regulations 1996, as amended from time to time.

Reheater Time Constant

Determined at **Registered Capacity**, the reheater time constant will be construed in accordance with the principles of the IEEE Committee Report "Dynamic Models for Steam and Hydro Turbines in Power System Studies" published in 1973 which apply to such phrase.

Relevant Transmission Licensee

Means SP Transmission Ltd (**SPT**) in its **Transmission Area** and Scottish Hydro-Electric Transmission Ltd (**SHETL**) in its **Transmission Area**.

Remote Transmission Assets

Any **Plant** and **Apparatus** or meters owned by **NGC** which:

a) are **Embedded** in a **User System** and which are not directly connected by **Plant** and/or **Apparatus** owned by **NGC** to a sub-station owned by **NGC**; and

b) are by agreement between **NGC** and such **User** operated under the direction and control of such **User**.

Requesting Safety Co-ordinator

The **Safety Co-ordinator** requesting **Safety Precautions**.

Responsible Engineer/ Operator

A person nominated by a **User** to be responsible for **System** control.

Responsible Manager A manager who has been duly authorised by a **User** or **NGC** to sign **Site Responsibility Schedules** on behalf of that **User** or **NGC**, as the case may be.

For **Connection Sites** in Scotland a manager who has been duly authorised by the **Relevant Transmission Licensee** to sign **Site Responsibility Schedules** on behalf of that **Relevant Transmission Licensee**.

Re-synchronisation The bringing of parts of the **Network Operator's User System** which have become **Out of Synchronism** with each other back into **Synchronism**, and like terms shall be construed accordingly.

Safety Co-ordinator A person or persons nominated by **NGC** and each **User** in relation to **Connection Points** in England and Wales and/or by the **Relevant Transmission Licensee** and each **User** in relation to **Connection Points** in Scotland to be responsible for the co-ordination of **Safety Precautions** at each **Connection Point** when work (which includes testing) is to be carried out on a **System** which necessitates the provision of **Safety Precautions** on **HV Apparatus** (as defined in OC8A.1.6.2 and OC8B.1.7.2), pursuant to **OC8**.

Safety From The System That condition which safeguards persons when work is to be carried out on or near a **System** from the dangers which are inherent in the **System**.

Safety Key A key unique at the **Location** capable of operating a lock which will cause an **Isolating Device** and/or **Earthing Device** to be **Locked**.

Safety Log A chronological record of messages relating to safety co-ordination sent and received by each **Safety Co-ordinator** under **OC8**.

Safety Precautions **Isolation** and/or **Earthing**.

Safety Rules The rules of **NGC** (in England and Wales) and the **Relevant Transmission Licensee** (in Scotland) or a **User** that seek to ensure that persons working on **Plant** and/or **Apparatus** to which the rules apply are safeguarded from hazards arising from the **System**.

Secondary Response The automatic increase in **Active Power** output of a **Genset** or, as the case may be, the decrease in **Active Power Demand** in response to a **System Frequency** fall. This increase in **Active Power** output or, as the case may be, the decrease in **Active Power Demand** must be in accordance with the provisions of the relevant **Ancillary Services Agreement** which will provide that it will be fully available by 30 seconds from the time of the start of the **Frequency** fall and be sustainable for at least a further 30 minutes. The interpretation of the **Secondary Response** to a -0.5 Hz frequency change is shown diagrammatically in Figure CC.A.3.2.

Secretary of State Has the same meaning as in the **Act**.

Settlement Period A period of 30 minutes ending on the hour and half-hour in each hour during a day.

Seven Year Statement A statement, prepared by **NGC** in accordance with the terms of **NGC's Transmission Licence**, showing for each of the seven succeeding **Financial Years**, the opportunities available for connecting to and using the **GB Transmission System** and indicating those parts of the **GB Transmission System** most suited to new connections and transport of further quantities of electricity.

SF_6 Gas Zone A segregated zone surrounding electrical conductors within a casing containing SF_6 gas.

SHETL Scottish Hydro-Electric Transmission Limited

Shutdown The condition of a **Generating Unit** where the generator rotor is at rest or on barring.

Significant Incident An **Event** which either:

a) was notified by a **User** to **NGC** under **OC7**, and which **NGC** considers has had or may have had a significant effect on the **GB Transmission System**, and **NGC** requires the **User** to report that **Event** in writing in accordance with **OC10** and notifies the **User** accordingly; or

b) was notified by **NGC** to a **User** under **OC7**, and which that **User** considers has had or may have had a significant effect on that **User's System**, and that **User** requires **NGC** to report that **Event** in writing in accordance with the provisions of **OC10** and notifies **NGC** accordingly.

Simultaneous Tap Change A tap change implemented on the generator step-up transformers of **Synchronised Gensets**, effected by **Generators** in response to an instruction from **NGC** issued simultaneously to the relevant **Power Stations**. The instruction, preceded by advance notice, must be effected as soon as possible, and in any event within one minute of receipt from **NGC** of the instruction.

Single Line Diagram A schematic representation of a three-phase network in which the three phases are represented by single lines. The diagram shall include (but not necessarily be limited to) busbars, overhead lines, underground cables, power transformers and reactive compensation equipment. It shall also show where **Large Power Stations** are connected, and the points at which **Demand** is supplied.

Single Point of Connection A single **Point of Connection**, with no interconnection through the **User's System** to another **Point of Connection**.

Site Common Drawings	Drawings prepared for each **Connection Site** which incorporate **Connection Site** layout drawings, electrical layout drawings, common protection/ control drawings and common services drawings.
Site Responsibility Schedule	A schedule containing the information and prepared on the basis of the provisions set out in Appendix 1 of the **CC**.
Small Power Station	A **Power Station** in **NGC's Transmission Area** with a **Registered Capacity** of less than 50MW or a **Power Station** in **SPT's** or **SHETL's Transmission Area** with a **Registered Capacity** of less than 5 MW.
Speeder Motor Setting Range	The minimum and maximum no-load speeds (expressed as a percentage of rated speed) to which the turbine is capable of being controlled, by the speeder motor or equivalent, when the **Generating Unit** terminals are on open circuit.
SPT	SP Transmission Limited
Standard Planning Data	The general data required by **NGC** under the **PC**. It is generally also the data which **NGC** requires from a new **User** in an application for a **CUSC Contract**, as reflected in the **PC**.
Start Time	The time named as such in an instruction issued by **NGC** pursuant to the **BC**s.
Start-Up	The action of bringing a **Generating Unit** from **Shutdown** to **Synchronous Speed**.
Statement of Readiness	Has the meaning set out in the **Bilateral Agreement** and/or **Construction Agreement**.
Station Board	A switchboard through which electrical power is supplied to the **Auxiliaries** of a **Power Station**, and which is supplied by a **Station Transformer**. It may be interconnected with a **Unit Board**.
Station Transformer	A transformer supplying electrical power to the **Auxiliaries** of a **Power Station**, which is not directly connected to the **Generating Unit** terminals (typical voltage ratios being 132/11kV or 275/11kV).
STC Committee	The committee established under the **STC**.
Steam Unit	A **Generating Unit** whose prime mover converts the heat-energy in steam to mechanical energy.

Subtransmission System — The part of a **User's System** which operates at a single transformation below the voltage of the relevant **Transmission System**.

Supergrid Voltage — Any voltage greater than 200kV.

Supplier

(a) A person supplying electricity under an **Electricity Supply Licence**; or

(b) A person supplying electricity under exemption under the **Act**;

in each case acting in its capacity as a supplier of electricity to **Customers** in **Great Britain**.

Surplus — A MW figure relating to a **System Zone** equal to the total **Output Usable** in the **System Zone:**

a) minus the forecast of **Active Power Demand** in the **System Zone**, and

b) minus the export limit in the case of an export limited **System Zone**,

or

plus the import limit in the case of an import limited **System Zone**,

and

c) (only in the case of a **System Zone** comprising the **GB Transmission System**) minus the **Operational Planning Margin**.

For the avoidance of doubt, a **Surplus** of more than zero in an export limited **System Zone** indicates an excess of generation in that **System Zone**; and a **Surplus** of less than zero in an import limited **System Zone** indicates insufficient generation in that **System Zone.**

Synchronised

a) The condition where an incoming **Generating Unit** or **System** is connected to the busbars of another **System** so that the **Frequencies** and phase relationships of that **Generating Unit** or **System**, as the case may be, and the **System** to which it is connected are identical, like terms shall be construed accordingly.

b) The condition where an importing **BM Unit** is consuming electricity.

Synchronising Generation — The amount of MW (in whole MW) produced at the moment of synchronising.

Synchronising Group — A group of two or more **Gensets**) which require a minimum time interval between their **Synchronising** or **De-Synchronising** times.

Synchronous Compensation	The operation of rotating synchronous **Apparatus** for the specific purpose of either the generation or absorption of **Reactive Power**.
Synchronous Speed	That speed required by a **Generating Unit** to enable it to be **Synchronised** to a **System**.
System	Any **User System** and/or the **GB Transmission System**, as the case may be.
System Ancillary Services	Collectively **Part 1 System Ancillary Services** and **Part 2 System Ancillary Services**.
System Constraint	A limitation on the use of a **System** due to lack of transmission capacity or other **System** conditions.
System Constrained Capacity	That portion of **Registered Capacity** not available due to a **System Constraint**.
System Constraint Group	A part of the **GB Transmission System** which, because of **System Constraints**, is subject to limits of **Active Power** which can flow into or out of (as the case may be) that part.
System Fault Dependability Index or **Dp**	A measure of the ability of **Protection** to initiate successful tripping of circuit-breakers which are associated with a faulty item of **Apparatus**. It is calculated using the formula: **Dp** = $1 - F_1/A$ Where: A = Total number of **System** faults F_1 = Number of **System** faults where there was a failure to trip a circuit-breaker.
System Margin	The margin in any period between (a) the sum of Maximum Export Limits and (b) forecast **Demand** and the **Operating Margin**, for that period.
System Negative Reserve Active Power Margin or **System NRAPM**	That margin of **Active Power** sufficient to allow the largest loss of **Load** at any time.

System Operator - Transmission Owner Code or **STC**	Has the meaning set out in **NGC's Transmission Licence**
System Tests	Tests which involve simulating conditions, or the controlled application of irregular, unusual or extreme conditions, on the **Total System**, or any part of the **Total System**, but which do not include commissioning or recommissioning tests or any other tests of a minor nature.
System to Demand Intertrip Scheme	An intertrip scheme which disconnects **Demand** when a **System** fault has arisen to prevent abnormal conditions occurring on the **System**.
System Zone	A region of the **GB Transmission System** within a described boundary or the whole of the **GB Transmission System**, as further provided for in OC2.2.4, and the term "**Zonal**" will be construed accordingly.
Target Frequency	That **Frequency** determined by **NGC**, in its reasonable opinion, as the desired operating **Frequency** of the **Total System**. This will normally be 50.00Hz plus or minus 0.05Hz, except in exceptional circumstances as determined by **NGC**, in its reasonable opinion when this may be 49.90 or 50.10Hz. An example of exceptional circumstances may be difficulties caused in operating the **System** during disputes affecting fuel supplies.
Technical Specification	In relation to **Plant** and/or **Apparatus**, a) the relevant **European Specification**; or b) if there is no relevant **European Specification**, other relevant standards which are in common use in the European Community.
Test Co-ordinator	A person who co-ordinates **System Tests**.
Test Panel	A panel, whose composition is detailed in **OC12**, which is responsible, inter alia, for considering a proposed **System Test**, and submitting a **Proposal Report** and a **Test Programme**.
Test Programme	A programme submitted by the **Test Panel** to **NGC**, the **Test Proposer**, and each **User** identified by **NGC** under OC12.4.2.1, which states the switching sequence and proposed timings of the switching sequence, a list of those staff involved in carrying out the **System Test** (including those responsible for the site safety) and such other matters as the **Test Panel** deems appropriate.
Test Proposer	The person who submits a **Proposal Notice**.

Total Shutdown	The situation existing when all generation has ceased and there is no electricity supply from **External Interconnections** and, therefore, the **Total System** has shutdown with the result that it is not possible for the **Total System** to begin to function again without **NGC's** directions relating to a **Black Start**.
Total System	The **GB Transmission System** and all **User Systems** in **Great Britain**.
Trading Point	A commercial and, where so specified in the **Grid Code**, an operational interface between a **User** and **NGC**, which a **User** has notified to **NGC**.
Transfer Date	Such date as may be appointed by the **Secretary of State** by order under section 65 of the **Act**.
Transmission	Means, when used in conjunction with another term relating to equipment or a site, whether defined or not, that the associated term is to be read as being part of or directly associated with the **GB Transmission System**, and not of or with the **User System**.
Transmission Area	Has the meaning set out in the **Transmission Licence** of a **Transmission Licensee**.
Transmission Entry Capacity	Has the meaning set out in the **CUSC**.
Transmission Licence	A licence granted under Section 6(1)(b) of the **Act**.
Transmission Licensee	Means the holder for the time being of a **Transmission Licence**.
Transmission Site	In England and Wales, means a site owned (or occupied pursuant to a lease, licence or other agreement) by **NGC** in which there is a **Connection Point**. For the avoidance of doubt, a site owned by a **User** but occupied by **NGC** as aforesaid, is a **Transmission Site**. In Scotland, means a site owned (or occupied pursuant to a lease, licence or other agreement) by a **Relevant Transmission Licensee** in which there is a **Connection Point**. For the avoidance of doubt, a site owned by a **User** but occupied by the **Relevant Transmission Licensee** as aforesaid, is a **Transmission Site**.
Transmission System	Has the same meaning as the term "licensee's transmission system" in the **Transmission Licence** of a **Transmission Licensee**.

Turbine Time Constant	Determined at **Registered Capacity**, the turbine time constant will be construed in accordance with the principles of the IEEE Committee Report "Dynamic Models for Steam and Hydro Turbines in Power System Studies" published in 1973 which apply to such phrase.
Two Shifting Limit	The maximum number of times in any **Operational Day** that a **Genset** may **De-Synchronise**.
Unbalanced Load	The situation where the **Load** on each phase is not equal.
Under-excitation Limiter	Shall have the meaning ascribed to that term in **IEC** 34-16-1:1991 [equivalent to **British Standard BS**4999 Section 116.1 : 1992].
Under Frequency Relay	An electrical measuring relay intended to operate when its characteristic quantity (**Frequency**) reaches the relay settings by decrease in **Frequency**.
Unit Board	A switchboard through which electrical power is supplied to the **Auxiliaries** of a **Generating Unit** and which is supplied by a **Unit Transformer**. It may be interconnected with a **Station Board**.
Unit Transformer	A transformer directly connected to a **Generating Unit's** terminals, and which supplies power to the **Auxiliaries** of a **Generating Unit**. Typical voltage ratios are 23/11kV and 15/6.6Kv.
Unit Load Controller Response Time Constant	The time constant, expressed in units of seconds, of the power output increase which occurs in the **Secondary Response** timescale in response to a step change in **System Frequency**.
User	A term utilised in various sections of the **Grid Code** to refer to the persons using the **GB Transmission System**, as more particularly identified in each section of the **Grid Code** concerned. In the **Preface** and the **General Conditions** the term means any person to whom the **Grid Code** applies.
User Development	In the **PC** means either **User's Plant** and/or **Apparatus** to be connected to the **GB Transmission System**, or a **Modification** relating to a **User's Plant** and/or **Apparatus** already connected to the **GB Transmission System**, or a proposed new connection or **Modification** to the connection within the **User System**.

User Site

In England and Wales, a site owned (or occupied pursuant to a lease, licence or other agreement) by a **User** in which there is a **Connection Point**. For the avoidance of doubt, a site owned by **NGC** but occupied by a **User** as aforesaid, is a **User Site**.

In Scotland, a site owned (or occupied pursuant to a lease, licence or other agreement) by a **User** in which there is a **Connection Point**. For the avoidance of doubt, a site owned by a **Relevant Transmission Licensee** but occupied by a **User** as aforesaid, is a **User Site**.

User System

Any system owned or operated by a **User** comprising:-

(a) **Generating Units**; and/or

(b) Systems consisting (wholly or mainly) of electric lines used for the distribution of electricity from **Grid Supply Points** or **Generating Units** or other entry points to the point of delivery to **Customers**, or other **Users**;

and **Plant** and/or **Apparatus** connecting:-

(c) The system as described above; or

(d) **Non-Embedded Customers** equipment;

to the **GB Transmission System** or to the relevant other **User System**, as the case may be.

The **User System** includes any **Remote Transmission Assets** operated by such **User** or other person and any **Plant** and/or **Apparatus** and meters owned or operated by the **User** or other person in connection with the distribution of electricity but does not include any part of the **GB Transmission System**.

User System Entry Point

A point at which a **Generating Unit**, a **CCGT Module** or a **CCGT Unit**, as the case may be, which is **Embedded** connects to the **User System**.

Water Time Constant

Bears the meaning ascribed to the term "Water inertia time" in **IEC**308.

Weekly ACS Conditions

Means that particular combination of weather elements that gives rise to a level of peak **Demand** within a week, taken to commence on a Monday and end on a Sunday, which has a particular chance of being exceeded as a result of weather variation alone. This particular chance is determined such that the combined probabilities of **Demand** in all weeks of the year exceeding the annual peak **Demand** under **Annual ACS Conditions** is 50%, and in the week of maximum risk the weekly peak **Demand** under **Weekly ACS Conditions** is equal to the annual peak **Demand** under **Annual ACS Conditions**.

Zonal System Security Requirements

That generation required, within the boundary circuits defining the **System Zone**, which when added to the secured transfer capability of the boundary circuits exactly matches the **Demand** within the **System Zone**.

A number of the terms listed above are defined in other documents, such as the **Balancing and Settlement Code** and the **Transmission Licence**. Appendix 1 sets out the current definitions from the other documents of those terms so used in the **Grid Code** and defined in other documents for ease of reference, but does not form part of the **Grid Code**.

2. Construction of References

In the **Grid Code**:

(i) a table of contents, a Preface, a Revision section, headings, and the Appendix to this **Glossary and Definitions** are inserted for convenience only and shall be ignored in construing the **Grid Code**;

(ii) unless the context otherwise requires, all references to a particular paragraph, sub-paragraph, Appendix or Schedule shall be a reference to that paragraph, sub-paragraph Appendix or Schedule in or to that part of the **Grid Code** in which the reference is made;

(iii) unless the context otherwise requires, the singular shall include the plural and vice versa, references to any gender shall include all other genders and references to persons shall include any individual, body corporate, corporation, joint venture, trust, unincorporated association, organisation, firm or partnership and any other entity, in each case whether or not having a separate legal personality;

(iv) references to the words "include" or "including" are to be construed without limitation to the generality of the preceding words;

(v) unless there is something in the subject matter or the context which is inconsistent therewith, any reference to an Act of Parliament or any Section of or Schedule to, or other provision of an Act of Parliament shall be construed at the particular time, as including a reference to any modification, extension or re-enactment thereof then in force and to all instruments, orders and regulations then in force and made under or deriving validity from the relevant Act of Parliament;

(vi) where the **Glossary and Definitions** refers to any word or term which is more particularly defined in a part of the **Grid Code**, the definition in that part of the **Grid Code** will prevail (unless otherwise stated) over the definition in the **Glossary & Definitions** in the event of any inconsistency;

(vii) a cross-reference to another document or part of the **Grid Code** shall not of itself impose any additional or further or co-existent obligation or confer any additional or further or co-existent right in the part of the text where such cross-reference is contained;

(viii) nothing in the **Grid Code** is intended to or shall derogate from **NGC's** statutory or licence obligations;

(ix) a "holding company" means, in relation to any person, a holding company of such person within the meaning of section 736, 736A and 736B of the Companies Act 1985 as substituted by section 144 of the Companies Act 1989 and, if that latter section is not in force at the **Transfer Date**, as if such latter section were in force at such date;

(x) a "subsidiary" means, in relation to any person, a subsidiary of such person within the meaning of section 736, 736A and 736B of the Companies Act 1985 as substituted by section 144 of the Companies Act 1989 and, if that latter section is not in force at the **Transfer Date**, as if such latter section were in force at such date;

(xi) references to time are to London time; and

(xii) Where there is a reference to an item of data being expressed in a whole number of MW, fractions of a MW below 0.5 shall be rounded down to the nearest whole MW and fractions of a MW of 0.5 and above shall be rounded up to the nearest whole MW.

< End of GD >

OPERATING CODE NO. 5

TESTING AND MONITORING

CONTENTS

(This contents page does not form part of the Grid Code)

OPERATING CODE NO. 5

TESTING AND MONITORING

OC5.1 INTRODUCTION

Operating Code No. 5 ("**OC5**") specifies the procedures to be followed by **NGC** in carrying out:

(a) monitoring

(i) of **BM Units** against their expected input or output;

(ii) of compliance by **Users** with the **CC** and in the case of response to **Frequency**, **BC3**; and

(iii) of the provision by **Users** of **Ancillary Services** which they are required or have agreed to provide; and

(b) the following tests (which are subject to **System** conditions prevailing on the day):

(i) tests on **Gensets** to test that they have the capability to comply with the **CC** and, in the case of response to **Frequency**, **BC3** and to provide the **Ancillary Services** that they are either required or have agreed to provide;

(ii) tests on **BM Units**, to ensure that the **BM Units** are available in accordance with their submitted **Export and Import Limits, QPNs, Joint BM Unit Data** and **Dynamic Parameters**.

The **OC5** tests include the **Black Start Test** procedure.

In respect of a **Cascade Hydro Scheme** the provisions of **OC5** shall be applied as follows:

(y) in respect of the **BM Unit** for the **Cascade Hydro Scheme** the parameters referred to at OC5.4.1 (a) and (c) in respect of **Commercial Ancillary Services** will be monitored and tested;

(z) in respect of each **Genset** forming part of the **Cascade Hydro Scheme** the parameters referred to at OC5.4.1 (a), (b) and (c) will be tested and monitored. In respect of OC5.4.1 (a) the performance of the **Gensets** will be tested and monitored against their expected input or output derived from the data submitted under BC1.4.2(a)(2). Where necessary to give effect to the requirements for **Cascade Hydro Schemes** in the following provisions of **OC5** the term **Genset** will be read and construed in the place of **BM Unit**.

In respect of **Embedded Exemptable Large Power Stations** the provisions of **OC5** shall be applied as follows:

(1) where there is a **BM Unit** registered in the **BSC** in respect of **Generating Units** the provisions of **OC5** shall apply as written;

(2) in all other cases, in respect of each **Generating Unit** the parameters referred to at OC5.4.1(a), (b) and (c) will be tested and monitored. In respect of OC5.4.1(a) the performance of the **Generating Unit** will be tested and monitored against their expected input or output derived from the data submitted under BC1.4.2(a)(2). Where necessary to give effect to the requirements for such **Embedded Exemptable Large Power Stations** in the provisions of **OC5** the term **Generating Unit** will be read and construed in place of **BM Unit**.

OC5.2 OBJECTIVE

The objectives of **OC5** are to establish:

(a) that **Users** comply with the **CC**;

(b) whether **BM Units** operate in accordance with their expected input or output derived from their **Final Physical Notification Data** and agreed **Bid-Offer Acceptances** issued under **BC2**;

(c) whether each **BM Unit** is available as declared in accordance with its submitted **Export and Import Limits, QPN, Joint BM Unit Data** and **Dynamic Parameters**; and

(d) whether **Generators** and **Suppliers** can provide those **Ancillary Services** which they are either required or have agreed to provide.

In certain limited circumstances as specified in this **OC5** the output of **CCGT Units** may be verified, namely the monitoring of the provision of **Ancillary Services** and the testing of **Reactive Power** and automatic **Frequency Sensitive Operation**.

OC5.3 SCOPE

OC5 applies to **NGC** and to **Users**, which in **OC5** means:

(a) **Generators**;

(b) **Network Operators;**

(c) **Non-Embedded Customers**; and

(d) **Suppliers.**

OC5.4 MONITORING

OC5.4.1 Parameters to be monitored

NGC will monitor the performance of:

(a) **BM Units** against their expected input or output derived from their **Final Physical Notification Data** and agreed **Bid-Offer Acceptances** issued under **BC2**;

(b) compliance by **Users** with the **CC**; and

(c) the provision by **Users** of **Ancillary Services** which they are required or have agreed to provide.

OC5.4.2 Procedure for Monitoring

OC5.4.2.1 In the event that a **BM Unit** fails persistently, in **NGC's** reasonable view, to follow, in any material respect, its expected input or output or a **User** fails persistently to comply with the **CC** and in the case of response to **Frequency**, **BC3** or to provide the **Ancillary Services** it is required, or has agreed, to provide, **NGC** shall notify the relevant **User** giving details of the failure and of the monitoring that **NGC** has carried out.

OC5.4.2.2 The relevant **User** will, as soon as possible, provide **NGC** with an explanation of the reasons for the failure and details of the action that it proposes to take to:

(a) enable the **BM Unit** to meet its expected input or output or to provide the **Ancillary Services** it is required or has agreed to provide, within a reasonable period, or

(b) in the case of a **Generating Unit** or **CCGT Module** to comply with the **CC** and in the case of response to **Frequency**, **BC3** or to provide the **Ancillary Services** it is required or has agreed to provide, within a reasonable period.

OC5.4.2.3 **NGC** and the **User** will then discuss the action the **User** proposes to take and will endeavour to reach agreement as to:

(a) any short term operational measures necessary to protect other **Users;** and

(b) the parameters which are to be submitted for the **BM Unit** and the effective date(s) for the application of the agreed parameters.

OC5.4.2.4 In the event that agreement cannot be reached within 10 days of notification of the failure by **NGC** to the **User**, **NGC** or the **User** shall be entitled to require a test, as set out in OC5.5 and OC5.6, to be carried out.

OC5.5 PROCEDURE FOR TESTING

OC5.5.1 Request For Testing

OC5.5.1.1 **NGC** may at any time (although not normally more than twice in any calendar year in respect of any particular **BM Unit**) issue an instruction requiring a **User**

to carry out a test, provided **NGC** has reasonable grounds of justification based upon:

(a) a submission of data, or a statement from a **User** indicating a change in plant or apparatus or settings (including but not limited to governor and excitation control systems) that may reasonably be expected to result in a material change of performance; or

(b) monitoring carried out in accordance with OC5.4.2; or

(c) notification from a **User** of completion of an agreed action from OC5.4.2.

OC5.5.1.2 The test, referred to in OC5.5.1.1 and carried out at a time no sooner than 48 hours from the time that the instruction was issued, on any one or more of the **User's BM Units** should only be to demonstrate that the relevant **BM Unit**:

(a) if active in the **Balancing Mechanism**, meets the ability to operate in accordance with its submitted **Export and Import Limits**, **QPN, Joint BM Unit Data** and **Dynamic Parameters** and achieve its expected input or output which has been monitored under OC5.4; and

(b) meets the requirements of the paragraphs in the **CC** which are applicable to such **BM Units**; and

in the case of a **BM Unit** comprising a **Generating Unit** or a **CCGT Module** meets,

(c) the requirements for operation in **Frequency Sensitive Mode** and compliance with the requirements for operation in **Limited Frequency Sensitive Mode** in accordance with CC.6.3.3, BC3.5.2 and BC3.7.2; or

(d) the terms of the applicable **Supplemental Agreement** agreed with the **Generator** to have a **Fast Start Capability**; or

(e) the **Reactive Power** capability registered with **NGC** under **OC2** which shall meet the requirements set out in CC.6.3.2. In the case of a test on a **Generating Unit** within a **CCGT Module** the instruction need not identify the particular **CCGT Unit** within the **CCGT Module** which is to be tested, but instead may specify that a test is to be carried out on one of the **CCGT Units** within the **CCGT Module**.

OC5.5.1.3 (a) The instruction referred to in OC5.5.1.1 may only be issued if the relevant **User** has submitted **Export and Import Limits** which notify that the relevant **BM Unit** is available in respect of the **Operational Day** current at the time at which the instruction is issued. The relevant **User** shall then be obliged to submit **Export and Import Limits** with a magnitude greater than zero for that **BM Unit** in respect of the time and the duration that the test is instructed to be carried out, unless that **BM Unit** would not then be available by reason of forced outage or **Planned Outage** expected prior to this instruction.

(b) In the case of a **CCGT Module** the **Export and Import Limits** data must relate to the same **CCGT Units** which were included in respect of the **Operational Day** current at the time at which the instruction is issued and

must include, in relation to each of the **CCGT Units** within the **CCGT Module**, details of the various data set out in BC1.A.1.3 and BC1.A.1.5, which parameters **NGC** will utilise in instructing in accordance with this OC5 in issuing **Bid-Offer Acceptances**. The parameters shall reasonably reflect the true operating characteristics of each **CCGT Unit**.

OC5.5.2 Conduct Of Test

OC5.5.2.1 The performance of the **BM Unit** will be recorded at **Transmission Control Centres** notified by **NGC** with monitoring at site when necessary, from voltage and current signals provided by the **User** for each **BM Unit** under CC.6.6.1.

OC5.5.2.2 If monitoring at site is undertaken, the performance of the **BM Unit** will be recorded on a suitable recorder (with measurements, in the case of a **Generating Unit**, taken on the **Generating Unit** Stator Terminals / on the **LV** side of the generator transformer) in the relevant **User's Control Room**, in the presence of a reasonable number of representatives appointed and authorised by **NGC**. If **NGC** or the **User** requests, monitoring at site will include measurement of the following parameters:

(a) for Steam Turbines: governor pilot oil pressure, valve position and steam pressure; or

(b) for Gas Turbines: Inlet Guide Vane position, Fuel Valve positions, Fuel Demand signal and Exhaust Gas temperature; or

(c) for Hydro Turbines: Governor Demand signal, Actuator Output signal, Guide Vane position; and/or

(d) for Excitation Systems: Generator Field Voltage and **Power System Stabiliser** signal where appropriate.

OC5.5.2.3 The test will be initiated by the issue of instructions, which may be accompanied by a **Bid-Offer Acceptance**, under **BC2** (in accordance with the **Export and Import Limits, QPN, Joint BM Unit Data** and **Dynamic Parameters** which have been submitted for the day on which the test was called, or in the case of a **CCGT Unit**, in accordance with the parameters submitted under OC5.5.1.3). The instructions in respect of a **CCGT Unit** within a **CCGT Module** will be in respect of the **CCGT Unit**, as provided in BC2.

OC5.5.2.4 The **User** is responsible for carrying out the test when requested by **NGC** in accordance with OC5.5.1 and retains the responsibility for the safety of personnel and plant during the test.

The pass criteria must be read in conjunction with the full text under the Grid Code reference. The **BM Unit** will pass the test if the criteria below are met:

	Parameter to be Tested	Grid Code Reference	Pass Criteria (to be read in conjunction with the full text under the Grid Code reference)
Voltage Quality	Harmonic Content	CC.6.1.5(a)	Measured harmonic emissions do not exceed the limits specified in the **Bilateral Agreement** or where no such limits are specified, the relevant planning level specified in G5/4.
	Phase Unbalance	CC.6.1.5(b)	The measured maximum **Phase (Voltage) Unbalance** on the **GB Transmission System** should remain, in England and Wales, below 1% and, in Scotland, below 2%.
	Phase Unbalance	CC.6.1.6	In England and Wales, measured infrequent short duration peaks in **Phase** (**Voltage**) **Unbalance** should not exceed the maximum value stated in the **Bilateral Agreement.**
	Voltage Fluctuations	CC.6.1.7(a)	In England and Wales, measured voltage fluctuations at the **Point of Common Coupling** shall not exceed 1% of the voltage level for step changes. Measured voltage excursions other than step changes may be allowed up to a level of 3%. In Scotland, measured voltage fluctuations at a **Point of Common Coupling** shall not exceed the limits set out in **Engineering Recommendation** P28.
	Flicker	CC.6.1.7(b)	Measured voltage fluctuations at a **Point of Common Coupling** shall not exceed, for voltages above 132kV, **Flicker Severity (Short Term)** of 0.8 Unit and **Flicker Severity (Long Term)** of 0.6 Unit, and, for voltages at 132kV and below, shall not exceed **Flicker Severity (Short Term)** of 1.0 Unit and **Flicker Severity (Long Term)** of 0.8 Unit, as set out in **Engineering Recommendation** P28 as current at the **Transfer Date**.

BALANCING CODE No 1

PRE GATE CLOSURE PROCESS

CONTENTS

(This contents page does not form part of the Grid Code)

BALANCING CODE No 1

PRE GATE CLOSURE PROCESS

BC1.1 INTRODUCTION

Balancing Code No1 (BC1) sets out the procedure for:

(a) the submission of **BM Unit Data** and/or **Generating Unit Data** by each **BM Participant**;

(b) the submission of certain **System** data by each **Network Operator**; and

(c) the provision of data by **NGC,**

in the period leading up to **Gate Closure**.

BC1.2 OBJECTIVE

The procedure for the submission of **BM Unit Data** and/or **Generating Unit Data** is intended to enable **NGC** to assess which **BM Units** and **Generating Units** are expected to be operating in order that **NGC** can ensure (so far as possible) the integrity of the **GB Transmission System**, and the security and quality of supply.

Where reference is made in this **BC1** to **Generating Units** (unless otherwise stated) it only applies to:

(a) each **Generating Unit** which forms part of the **BM Unit** of a **Cascade Hydro Scheme**; and

(b) each **Generating Unit** at an **Embedded Exemptable Large Power Station** where the **Bilateral Agreement** specifies that **NGC** reasonably requires compliance with **BC1** on a **Generating Unit** basis.

BC1.3 SCOPE

BC1 applies to **NGC** and to **Users**, which in this **BC1** means:-

(a) **BM Participants;**

(b) **Externally Interconnected System Operators**; and

(c) **Network Operators**.

BC1.4 SUBMISSION OF DATA

In the case of **BM Units** or **Generating Units Embedded** in a **User System**, any data submitted by **Users** under this **BC1** must represent the value of the data at the relevant **Grid Supply Point**.

BC1.4.1 Communication with **Users**

(a) Submission of **BM Unit Data** and **Generating Unit Data** by **Users** to **NGC** specified in BC1.4.2 to BC1.4.4 (with the exception of BC1.4.2(f)) is to be by use of electronic data communications facilities, as provided for in CC.6.5.8. However, data specified in BC1.4.2(c) and BC1.4.2(e) only, may be revised by telephone following its initial submission by electronic data communication facilities.

(b) In the event of a failure of the electronic data communication facilities, the data to apply in relation to a pre-**Gate Closure** period will be determined in accordance with the **Data Validation, Consistency and Defaulting Rules**, based on the most recent data received and acknowledged by **NGC**.

(c) **Planned Maintenance Outages** will normally be arranged to take place during periods of low data transfer activity.

(d) Upon any **Planned Maintenance Outage**, or following an unplanned outage described in BC1.4.1(b) (where it is termed a "failure") in relation to a pre-**Gate Closure** period:-

(i) **BM Participants** should continue to act in relation to any period of time in accordance with the **Physical Notifications** current at the time of the start of the **Planned Maintenance Outage** or the computer system failure in relation to each such period of time subject to the provisions of BC2.5.1. Depending on when in relation to **Gate Closure** the planned or unplanned maintenance outage arises such operation will either be operation in preparation for the relevant output in real time, or will be operation in real time. No further submissions of **BM Unit Data** and/or **Generating Unit Data** (other than data specified in BC1.4.2(c) and BC1.4.2(e)) should be attempted. Plant failure or similar problems causing significant deviation from **Physical Notification** should be notified to **NGC** by the submission of a revision to **Export and Import Limits** in relation to the **BM Unit** and /or **Generating Unit** so affected;

(ii) during the outage, revisions to the data specified in BC1.4.2(c) and BC1.4.2(e) may be submitted. Communication between **Users' Control Points** and **NGC** during the outage will be conducted by telephone; and

(iii) no data will be transferred from **NGC** to the **BMRA** until the communication facilities are re-established.

BC1.4.2 Day Ahead Submissions

Data for any **Operational Day** may be submitted to **NGC** up to several days in advance of the day to which it applies, as provided in the **Data Validation, Consistency and Defaulting Rules**. However, **Interconnector Users** must submit **Physical Notifications,** and any associated data as necessary, each day by 11:00 hours in respect of the next following **Operational Day** in order that the information used in relation to the capability of the respective **External Interconnection** is expressly provided. **NGC** shall not by the inclusion of this provision be prevented from utilising the provisions of BC1.4.5 if necessary.

The data may be modified by further data submissions at any time prior to **Gate Closure**, in accordance with the other provisions of **BC1**. The data to be used by **NGC** for operational planning will be determined from the most recent data that has

been received by **NGC** by 11:00 hours on the day before the **Operational Day** to which the data applies, or from the data that has been defaulted at 11:00 hours on that day in accordance with BC1.4.5. Any subsequent revisions received by **NGC** under the **Grid Code** will also be utilised by **NGC**. In the case of all data items listed below, with the exception of item (e), **Dynamic Parameters** (Day Ahead), the latest submitted or defaulted data, as modified by any subsequent revisions, will be carried forward into operational timescales. The individual data items are listed below:-

(a) **Physical Notifications**

Physical Notifications, being the data listed in **BC1** Appendix 1 under that heading, are required by **NGC** at 11:00 hours each day for each **Settlement Period** of the next following **Operational Day,** in respect of;

(1) **BM Units**:-

(i) with a **Demand Capacity** with a magnitude of 50MW or more in England and Wales or 5MW or more in Scotland; or

(ii) comprising **Generating Units** (as defined in the Glossary and Definitions and not limited by BC1.2) and/or **CCGT Modules** at **Large Power Stations** and **Medium Power Stations;** or

(iii) where the **BM Participant** chooses to submit **Bid-Offer Data** in accordance with BC1.4.2(d) for **BM Units** not falling within (i) or (ii) above,

and

(2) each **Generating Unit**.

Physical Notifications may be submitted to **NGC** by **BM Participants,** for the **BM Units**, and **Generating Units**, specified in this BC1.4.2(a) at an earlier time, or **BM Participants** may rely upon the provisions of BC1.4.5 to create the **Physical Notifications** by data defaulting pursuant to the **Grid Code** utilising the rules referred to in that paragraph at 11:00 hours in any day.

Physical Notifications (which must comply with the limits on maximum rates of change listed in **BC1** Appendix 1) must, subject to the following operating limits, represent the **User's** best estimate of expected input or output of **Active Power** and shall be prepared in accordance with **Good Industry Practice**. **Physical Notifications** for any **BM Unit**, and any **Generating Units**, should normally be consistent with the **Dynamic Parameters** and **Export and Import Limits** and must not reflect any **BM Unit** or any **Generating Units**, proposing to operate outside the limits of its **Demand Capacity** and (and in the case of **BM Units**) **Generation Capacity** and, in the case of a **BM Unit** comprising a **Generating Unit** (as defined in the Glossary and Definitions and not limited by BC1.2) or **CCGT Module**, its **Registered Capacity.**

These **Physical Notifications** provide, amongst other things, indicative **Synchronising** and **De-Synchronising** times to **NGC** in respect of any **BM Unit** comprising a **Generating Unit** (as defined in the Glossary and Definitions and not limited by BC1.2) or **CCGT Module**, and for any **Generating Units**, and provide an indication of significant **Demand** changes in respect of other **BM Units**.

(b) **Quiescent Physical Notifications**

Each **BM Participant** may, in respect of each of its **BM Units**, submit to **NGC** for each **Settlement Period** of the next following **Operational Day** the data listed in

BC1 Appendix 1 under the heading of "**Quiescent Physical Notifications**" to amend the data already held by **NGC** in relation to **Quiescent Physical Notifications,** which would otherwise apply for those **Settlement Periods**.

(c) **Export and Import Limits**

Each **BM Participant** may, in respect of each of its **BM Units** and its **Generating Units** submit to **NGC** for any part or for the whole of the next following **Operational Day** the data listed in **BC1** Appendix 1 under the heading of "**Export and Import Limits**" to amend the data already held by **NGC** in relation to **Export and Import Limits,** which would otherwise apply for those **Settlement Periods.**

Export and Import Limits respectively represent the maximum export to or import from the **GB Transmission System** for a **BM Unit** and a **Generating Unit** and are the maximum levels that the **BM Participant** wishes to make available and must be prepared in accordance with **Good Industry Practice**.

(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 **NGC** 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 **NGC** in relation to **Bid-Offer Data**, which would otherwise apply to those **Settlement Periods**. The submitted **Bid-Offer Data** will be utilised by **NGC** in the preparation and analysis of its operational plans for the next following **Operational Day**. **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).

(e) **Dynamic Parameters** (Day Ahead)

Each **BM Participant** may, in respect of each of its **BM Units**, but must not in respect of its **Generating Units** submit to **NGC** for the next following **Operational Day** the data listed in **BC1** Appendix 1 under the heading of "**Dynamic Parameters**" to amend that data already held by **NGC.**

These **Dynamic Parameters** shall reasonably reflect the expected true operating characteristics of the **BM Unit** and shall be prepared in accordance with **Good Industry Practice**. In any case where non-zero **QPN** data has been provided in accordance with BC1.4.2(b), the **Dynamic Parameters** will apply to the element being offered for control only, i.e. to the component of the **Physical Notification** between the **QPN** and the full level of the **Physical Notification**.

The **Dynamic Parameters** applicable to the next following **Operational Day** will be utilised by **NGC** in the preparation and analysis of its operational plans for the next following **Operational Day** and may be used to instruct certain **Ancillary Services**. For the avoidance of doubt, the **Dynamic Parameters** to be used in the current **Operational Day** will be those submitted in accordance with BC2.5.3.1.

(f) **Other Relevant Data**

By 11:00 hours each day each **BM Participant,** in respect of each of its **BM Units** and **Generating Units** for which **Physical Notifications** are being submitted, shall, if it has not already done so, submit to **NGC** (save in respect of item (vi) where the item shall be submitted only when reasonably required by **NGC**), in respect of the next following **Operational Day** the following:

(i) in the case of a **CCGT Module**, a **CCGT Module Matrix** as described in **BC1** Appendix 1;

(ii) details of any special factors which in the reasonable opinion of the **BM Participant** may have a material effect or present an enhanced risk of a material effect on the likely output (or consumption) of such **BM Unit(s)**. Such factors may include risks, or potential interruptions, to **BM Unit** fuel supplies, or developing plant problems, details of tripping tests, etc. This information will normally only be used to assist in determining the appropriate level of **Operating Margin** that is required under OC2.4.6;

(iii) in the case of **Generators**, any temporary changes, and their possible duration, to the **Registered Data** of such **BM Unit**;

(iv) in the case of **Suppliers**, details of **Customer Demand Management** taken into account in the preparation of its **BM Unit Data**;

(v) details of any other factors which **NGC** may take account of when issuing **Bid-Offer Acceptances** for a **BM Unit** (e.g., **Synchronising** or **De-Synchronising** Intervals, the minimum notice required to cancel a **Synchronisation**, etc); and

(vi) in the case of a **Cascade Hydro Scheme**, the **Cascade Hydro Scheme Matrix** as described in **BC1** Appendix 1.

(g) **Joint BM Unit Data**

BM Participants may submit **Joint BM Unit Data** in accordance with the provisions of the **BSC**. For the purposes of the **Grid Code**, such data shall be treated as data submitted under **BC1**.

BC1.4.3 Data Revisions

The **BM Unit Data**, and **Generating Unit Data**, derived at 1100 hours each day under BC1.4.2 above may need to be revised by the **BM Participant** for a number of reasons, including for example, changes to expected output or input arising from revised contractual positions, plant breakdowns, changes to expected **Synchronising** or **De-Synchronising** times, etc, occurring before **Gate Closure**. **BM Participants** should use reasonable endeavours to ensure that the data held by **NGC** in relation to its **BM Units** and **Generating Units**, is accurate at all times. Revisions to **BM Unit Data**, and **Generating Unit Data** for any period of time up to **Gate Closure** should be submitted to **NGC** as soon as reasonably practicable after a change becomes apparent to the **BM Participant**. **NGC** will use reasonable endeavours to utilise the most recent data received from **Users,** subject to the application of the provisions of BC1.4.5, for its preparation and analysis of operational plans.

BC1.4.4 Receipt of **BM Unit Data** prior to **Gate Closure**

BM Participants submitting **Bid-Offer Data,** in respect of any **BM Unit** for use in the **Balancing Mechanism** for any particular **Settlement Period** in accordance with the **BSC**, must ensure that **Physical Notifications** and **Bid-Offer Data** for such **BM Units** are received in their entirety and logged into **NGC's** computer systems by the time of **Gate Closure** for that **Settlement Period**. In all cases the data received will be subject to the application under the **Grid Code** of the provisions of BC1.4.5*.*

For the avoidance of doubt, no changes to the **Physical Notification, QPN** data or **Bid-Offer Data** for any **Settlement Period** may be submitted to **NGC** after **Gate Closure** for that **Settlement Period**.

BC1.4.5 **BM Unit Data** Defaulting, Validity and Consistency Checking

In the event that no submission of any or all of the **BM Unit Data** and **Generating Unit Data** in accordance with BC1.4.2 in respect of an **Operational Day**, is received by **NGC** by 11:00 hours on the day before that **Operational Day**, **NGC** will apply the **Data Validation, Consistency and Defaulting Rules**, with the default rules applicable to **Physical Notifications**, **Quiescent Physical Notifications** and **Export and Import Limits** data selected as follows:

(a) for an **Interconnector User's BM Unit**, the defaulting rules will set some or all of the data for that **Operational Day** to zero, unless the relevant Interconnector arrangements, as agreed with **NGC**, state otherwise (in which case (b) applies); and

(b) for all other **BM Units** or **Generating Units**, the defaulting rules will set some or all of the data for that **Operational Day** to the values prevailing in the current **Operational Day**.

A subsequent submission by a **User** of a data item which has been so defaulted under the **Grid Code** will operate as an amendment to that defaulted data and thereby replace it. Any such subsequent submission is itself subject to the application under the **Grid Code** of the **Data Validation, Consistency and Defaulting Rules.**

BM Unit Data and **Generating Unit Data** submitted in accordance with the provisions of BC1.4.2 to BC1.4.4 will be checked under the **Grid Code** for validity and consistency in accordance with the **Data Validation, Consistency and Defaulting Rules**. If any **BM Unit Data** and **Generating Unit Data** so submitted fails the data validity and consistency checking, this will result in the rejection of all data submitted for that **BM Unit** or **Generating Unit** included in the electronic data file containing that data item and that **BM Unit's** or **Generating Unit's** data items will be defaulted under the **Grid Code** in accordance with the **Data Validation, Consistency and Defaulting Rules**. Data for other **BM Units** and **Generating Units** included in the same electronic data file will not be affected by such rejection and will continue to be validated and checked for consistency prior to acceptance. In the event that rejection of any **BM Unit Data** and **Generating Unit Data** occurs, details will be made available to the relevant **BM Participant** via the electronic data communication facilities. In the event of a difference between the **BM Unit Data** for the **Cascade Hydro Scheme** and sum of the data submitted for the **Generating Units** forming part of such **Cascade Hydro Scheme**, **the BM Unit Data** shall take precedence.

BC1.4.6 Special Provisions relating to **Interconnector Users**

(a) The total of the relevant **Physical Notifications** submitted by **Interconnector Users** in respect of any period of time should not exceed the capability (in MW) of the respective **External Interconnection** for that period of time. In the event that it does, then **NGC** shall advise the **Externally Interconnected System Operator** accordingly. In the period between such advice and **Gate Closure**, one or more of the relevant **Interconnector Users** would be expected to submit revised **Physical Notifications** to **NGC** to eliminate any such over-provision.

(b) In any case where, as a result of a reduction in the capability (in MW) of the **External Interconnection** in any period during an **Operational Day** which is agreed between **NGC** and an **Externally Interconnected System Operator** after 0900 hours on the day before the beginning of such **Operational Day**, the total of the **Physical Notifications** in the relevant period using that **External Interconnection**, as stated in the **BM Unit Data** exceeds the

reduced capability (in MW) of the respective **External Interconnection** in that period then **NGC** shall notify the **Externally Interconnected System Operator** accordingly.

BC1.5 INFORMATION PROVIDED BY **NGC**

NGC shall provide data to the **Balancing Mechanism Reporting Agent** or **BSCCo** each day in accordance with the requirements of the **BSC** in order that the data may be made available to **Users** via the **Balancing Mechanism Reporting Service** (or by such other means) in each case as provided in the **BSC**. Where **NGC** provides such information associated with the secure operation of the **System** to the **Balancing Mechanism Reporting Agent**, the provision of that information is additionally provided for in the following sections of this BC1.5. **NGC** shall be taken to have fulfilled its obligations to provide data under BC1.5.1, BC1.5.2, and BC1.5.3 by so providing such data to the **Balancing Mechanism Reporting Agent**.

BC1.5.1 **Demand** Estimates

Normally by 0900 hours each day, **NGC** will make available to **Users** a forecast of **GB National Demand** and the **Demand** for a number of pre-determined constraint groups (which may be updated from time to time, as agreed between **NGC** and **BSCCo**) for each **Settlement Period** of the next following **Operational Day**. Normally by 1200 hours each day, **NGC** will make available to **Users** a forecast of **GB Transmission System Demand** for each **Settlement Period** of the next **Operational Day**. Further details are provided in Appendix 2.

BC1.5.2 **Indicated Margin** and **Indicated Imbalance**

Normally by 1200 hours each day, **NGC** will make available to **Users** an **Indicated Margin** and an **Indicated Imbalance** for each **Settlement Period** of the next following **Operational Day**. **NGC** will use reasonable endeavours to utilise the most recent data received from **Users** in preparing for this release of data. Further details are provided in Appendix 2.

BC1.5.3 Provision of Updated Information

NGC will provide updated information on **Demand** and other information at various times throughout each day, as detailed in Appendix 2. **NGC** will use reasonable endeavours to utilise the most recent data received from **Users** in preparing for this release of data.

BC1.5.4 Reserve and Inadequate **System Margin**

Contingency Reserve

(a) The amount of **Contingency Reserve** required at the day ahead stage and in subsequent timescales will be decided by **NGC** on the basis of historical trends in the reduction in availability of **Large Power Stations** and increases in forecast **Demand** up to real time operation. Where **Contingency Reserve** is to be allocated to thermal **Gensets**, **NGC** will instruct through a combination of **Ancillary Services** instructions and **Bid-Offer Acceptances**, the time at which such **Gensets** are required to synchronise, such instructions to be consistent with **Dynamic Parameters** and other contractual arrangements.

Operating Reserve

(b) The amount of **Operating Reserve** required at any time will be determined by **NGC** having regard to the **Demand** levels, **Large Power Station** availability

shortfalls and the greater of the largest secured loss of generation (ie, the loss of generation against which, as a requirement of the **Licence Standards,** the **GB Transmission System** must be secured) or loss of import from or sudden export to **External Interconnections**. **NGC** will allocate **Operating Reserve** to the appropriate **BM Units** and **Generating Units** so as to fulfil its requirements according to the **Ancillary Services** available to it and as provided in the **BCs**.

Inadequate **System Margin**

(c) In the period following 1200 hours each day and in relation to the following **Operational Day, NGC** will monitor the total of the Maximum Export Limit component of the **Export and Import Limits** received against forecast **GB Transmission System Demand** and the **Operating Margin** and will take account of **Dynamic Parameters** to see whether the anticipated level of the **System Margin** for any period is insufficient.

(d) Where the level of the **System Margin** for any period is, in **NGC's** reasonable opinion, anticipated to be insufficient, **NGC** will send (by such data transmission facilities as have been agreed) a **GB Transmission System Warning** - **Inadequate System Margin** in accordance with OC7.4.8 to each **Generator**, **Supplier, Externally Interconnected System Operator, Network Operator** and **Non-Embedded Customer**.

(e) Where, in **NGC's** judgement the **System Margin** at any time during the current **Operational Day** is such that there is a high risk of **Demand** reduction being instructed, a **GB Transmission System Warning** - **High Risk of Demand Reduction** will be issued, in accordance with OC7.4.8.

(f) The monitoring will be conducted on a regular basis and a revised **GB Transmission System Warning** - **Inadequate System Margin** or **High Risk of Demand Reduction** may be sent out from time to time, including within the post **Gate Closure** phase. This will reflect any changes in **Physical Notifications** and **Export and Import Limits** which have been notified to **NGC**, and will reflect any **Demand Control** which has also been so notified. This will also reflect generally any changes in the forecast **Demand** and the relevant **Operating Margin**.

(g) To reflect changing conditions, a **GB Transmission System Warning - Inadequate System Margin** may be superseded by a **GB Transmission System Warning - High Risk of Demand Reduction** and vice-versa.

(h) If the continuing monitoring identifies that the **System Margin** is anticipated, in **NGC's** reasonable opinion, to be sufficient for the period for which previously a **GB Transmission System Warning** had been issued, **NGC** will send (by such data transmission facilities as have been agreed) a **Cancellation of GB Transmission System Warning** to each **User** who had received a **GB Transmission System Warning - Inadequate System Margin** or **High Risk of Demand Reduction** for that period. The issue of a **Cancellation of GB Transmission System Warning** is not an assurance by **NGC** that in the event the **System Margin** will be adequate, but reflects **NGC's** reasonable opinion that the insufficiency is no longer anticipated.

(i) If continued monitoring indicates the **System Margin** becoming inadequate **NGC** may issue further **GB Transmission System Warnings - Inadequate System Margin** or **High Risk of Demand Reduction.**

(j) **NGC** may issue a **GB Transmission System Warning - Inadequate System Margin** or **High Risk of Demand Reduction** for any period, not necessarily relating to the following **Operational Day**, where it has reason to believe there will be inadequate **System Margin** over a period (for example in periods of protracted **Plant** shortage, the provisions of OC7.4.8.6 apply).

BC1.5.5 System and Localised NRAPM (Negative Reserve Active Power Margin)

(a) (i) **System Negative Reserve Active Power Margin**

Synchronised Gensets must at all times be capable of reducing output such that the total reduction in output of all **Synchronised Gensets** is sufficient to offset the loss of the largest secured demand on the **System** and must be capable of sustaining this response;

(ii) **Localised Negative Reserve Active Power Margin**

Synchronised Gensets must at all times be capable of reducing output to allow transfers to and from the **System Constraint Group** (as the case may be) to be contained within such reasonable limit as **NGC** may determine and must be capable of sustaining this response.

(b) **NGC** will monitor the total of **Physical Notifications** of exporting **BM Units** and **Generating Units** (where appropriate) received against forecast **Demand** and, where relevant, the appropriate limit on transfers to and from a **System Constraint Group** and will take account of **Dynamic Parameters** and **Export and Import Limits** received to see whether the level of **System NRAPM** or **Localised NRAPM** for any period is likely to be insufficient. In addition, **NGC** may increase the required margin of **System NRAPM** or **Localised NRAPM** to allow for variations in forecast **Demand**. In the case of **System NRAPM**, this may be by an amount (in **NGC's** reasonable discretion) not exceeding five per cent of forecast **Demand** for the period in question. In the case of **Localised NRAPM**, this may be by an amount (in **NGC's** reasonable discretion) not exceeding ten per cent of the forecast **Demand** for the period in question;

(c) Where the level of **System NRAPM** or **Localised NRAPM** for any period is, in **NGC 's** reasonable opinion, likely to be insufficient **NGC** may contact all **Generators** in the case of low **System NRAPM** and may contact **Generators** in relation to relevant **Gensets** in the case of low **Localised NRAPM**. **NGC** will raise with each **Generator** the problems it is anticipating due to low **System NRAPM** or **Localised NRAPM** and will discuss whether, in advance of **Gate Closure**:-

(i) any change is possible in the **Physical Notification** of a **BM Unit** which has been notified to **NGC**; or

(ii) any change is possible to the **Physical Notification** of a **BM Unit** within an **Existing AGR Plant** within the **Existing AGR Plant Flexibility Limit;**

in relation to periods of low **System NRAPM** or (as the case may be) low **Localised NRAPM. NGC** will also notify each **Externally Interconnected System Operator** of the anticipated low **System NRAPM** or **Localised NRAPM** and request assistance in obtaining changes to **Physical Notifications** from **BM Units** in that **External System**.

(d) Following **Gate Closure**, the procedure of BC2.9.4 will apply.

BC1.6 Special Provisions relating to **Network Operators**

BC1.6.1 **User System** Data from **Network Operators**

(a) By 1000 hours each day each **Network Operator** will submit to **NGC** in writing, confirmation or notification of the following in respect of the next **Operational Day**:

(i) constraints on its **User System** which **NGC** may need to take into account in operating the **GB Transmission System**. In this BC1.6.1 the term "constraints" shall include restrictions on the operation of **Embedded CCGT Units** as a result of the **User System** to which the **CCGT Unit** is connected at the **User System Entry Point** being operated or switched in a particular way, for example, splitting the relevant busbar. It is a matter for the **Network Operator** and the **Generator** to arrange the operation or switching, and to deal with any resulting consequences. The **Generator,** after consultation with the **Network Operator**, is responsible for ensuring that no **BM Unit Data** submitted to **NGC** can result in the violation of any such constraint on the **User System**.

(ii) the requirements of voltage control and Mvar reserves which **NGC** may need to take into account for **System** security reasons.

(b) The form of the submission will be:

(i) that of a **BM Unit** output or consumption (for MW and for Mvar, in each case a fixed value or an operating range, on the **User System** at the **User System Entry Point**, namely in the case of a **BM Unit** comprising a **Generating Unit** (as defined in the Glossary and Definitions and not limited by BC1.2) on the higher voltage side of the generator step-up transformer) required for particular **BM Units** (identified in the submission) connected to that **User System** for each **Settlement Period** of the next **Operational Day**;

(ii) adjusted in each case for MW by the conversion factors applicable for those **BM Units** to provide output or consumption at the relevant **Grid Supply Points**.

(c) At any time and from time to time, between 1000 hours each day and the expiry of the next **Operational Day**, each **Network Operator** must submit to **NGC** in writing any revisions to the information submitted under this BC1.6.1.

BC1.6.2 Notification of Times to **Network Operators**

NGC will make available indicative **Synchronising** and **De-Synchronising** times to each **Network Operator**, but only relating to **BM Units** comprising a **Generating Unit** (as defined in the Glossary and Definitions and not limited by BC1.2) or a **CCGT Module Embedded** within that **Network Operator's User System** and those **Gensets** directly connected to the **GB Transmission System** which **NGC** has identified under **OC2** as being those which may, in the reasonable opinion of **NGC**, affect the integrity of that **User System**. If in preparing for the operation of the **Balancing Mechanism**, **NGC** becomes aware that a **BM Unit** directly connected to

the **GB Transmission System** may, in its reasonable opinion, affect the integrity of that other **User System** which, in the case of a **BM Unit** comprising a **Generating Unit** (as defined in the Glossary and Definitions and not limited by BC1.2) or a **CCGT Module,** it had not so identified under **OC2**, then **NGC** may make available details of its indicative **Synchronising** and **De-Synchronising** times to that other **User** and shall inform the relevant **BM Participant** that it has done so, identifying the **BM Unit** concerned.

BC1.7 Special Actions

BC1.7.1 **NGC** may need to identify special actions (either pre- or post-fault) that need to be taken by specific **Users** in order to maintain the integrity of the **GB Transmission System** in accordance with the **Licence Standards** and **NGC Operational Strategy**.

(a) For a **Generator** special actions will generally involve a **Load** change or a change of required Notice to Deviate from Zero NDZ, in a specific timescale on individual or groups of **Gensets**. They may also include selection of **"System** to **Genset"** or **"System** to **CCGT Unit"**, as the case may be, intertrip schemes for stability or thermal reasons.

(b) For **Network Operators** these special actions will generally involve **Load** transfers between **Grid Supply Points** or arrangements for **Demand** reduction by manual or automatic means.

(c) For **Externally Interconnected System Operators** (in their co-ordinating role for **Interconnector Users** using their **External System**) these special actions will generally involve an increase or decrease of net power flows across an **External Interconnection** by either manual or automatic means.

BC1.7.2 These special actions will be discussed and agreed with the relevant **User** as appropriate. The actual implementation of these special actions may be part of an "emergency circumstances" procedure described under **BC2**. If not agreed, generation or **Demand** may be restricted or may be at risk.

BC1.7.3 **NGC** will normally issue the list of special actions to the relevant **Users** by 1700 hours on the day prior to the day to which they are to apply.

APPENDIX 1

BM UNIT DATA

More detail about valid values required under the **Grid Code** for **BM Unit Data** and **Generating Unit Data** may be identified by referring to the **Data Validation, Consistency and Defaulting Rules.** In the case of **Embedded BM Units** and **Generating Units** the **BM Unit Data** and the **Generating Unit Data** shall represent the value at the relevant **Grid Supply Point**. Where data is submitted on a **Generating Unit** basis, the provisions of this Appendix 1 shall in respect of such data submission apply as if references to **BM Unit** were replaced with **Generating Unit**. Where **NGC** and the relevant **User** agree, submission on a **Generating Unit** basis (in whole or in part) may be otherwise than in accordance with the provisions of the Appendix 1.

*BC1.A.1.1 **Physical Notifications***

For each **BM Unit**, the **Physical Notification** is a series of MW figures and associated times, making up a profile of intended input or output of **Active Power** at the **Grid Entry Point** or **Grid Supply Point**, as appropriate. For each **Settlement Period**, the first "from time" should be at the start of the **Settlement Period** and the last "to time" should be at the end of the **Settlement Period**.

The input or output reflected in the **Physical Notification** for a single **BM Unit** (or the aggregate **Physical Notifications** for a collection of **BM Units** at a **Grid Entry Point** or **Grid Supply Point** or to be transferred across an **External Interconnection,** owned or controlled by a single **BM Participant**) must comply with the following limits regarding maximum rates of change, either for a single change or a series of related changes :

- for a change of up to 300MW — no limit;
- for a change greater than 300MW and less than 1000MW — 50MW per minute;
- for a change of 1000MW or more — 40MW per minute,

unless prior arrangements have been discussed and agreed with **NGC**. This limitation is not intended to limit the Run-Up or Run-Down Rates provided as **Dynamic Parameters.**

An example of the format of **Physical Notification** is shown below. The convention to be applied is that where it is proposed that the **BM Unit** will be importing, the **Physical Notification** is negative.

Data	Name	BMU name	Time From	From level (MW)	Time To	To Level MW)
PN	TAGENT	BMUNIT01	2001-11-03 06:30	77	2001-11-03 07:00	100
PN	TAGENT	BMUNIT01	2001-11-03 07:00	100	2001-11-03 07:12	150
PN	TAGENT	BMUNIT01	2001-11-03 07:12	150	2001-11-03 07:30	175

A linear interpolation will be assumed between the **Physical Notification** From and To levels specified for the **BM Unit** by the **BM Participant**.

*BC1.A.1. 2 **Quiescent Physical Notifications (QPN)***

For each **BM Unit** (optional)	A series of MW figures and associated times, which describe the MW levels to be deducted from the **Physical Notification** of a **BM Unit** to determine a resultant operating level to which the **Dynamic Parameters** associated with that **BM Unit** apply.

An example of the format of data is shown below.

Data Name	BMU name	Time From	From level (MW)	Time To	To level (MW)
QPN	TAGENT	BMUNIT04	2001-11-03 06:30	-200	2001-11-03 07:00	-220
QPN	TAGENT	BMUNIT04	2001-11-03 07:00	-220	2001-11-03 07:18	-245
QPN	TAGENT	BMUNIT04	2001-11-03 07:18	-245	2001-11-03 07:30	-300

A linear interpolation will be assumed between the **QPN** From and To levels specified for the **BM Unit** by the **BM Participant**.

*BC1.A.1.3 **Export and Import Limits***

BC1.A.1.3.1 Maximum Export Limit (MEL) — A series of MW figures and associated times, making up a profile of the maximum level at which the **BM Unit** may be exporting (in MW) to the **GB Transmission System** at the **Grid Entry Point** or **Grid Supply Point**, as appropriate.

BC1.A.1.3.2 Maximum Import Limit (MIL) — A series of MW figures and associated times, making up a profile of the maximum level at which the **BM Unit** may be importing (in MW) from the **GB Transmission System** at the **Grid Entry Point** or **Grid Supply Point**, as appropriate.

An example format of data is shown below. MEL must be positive or zero, and MIL must be negative or zero.

Data Name	BMU name	Time From	From level (MW)	Time To	To level (MW)
MEL	TAGENT	BMUNIT01	2001-11-03 05:00	410	2001-11-03 09:35	410
MEL	TAGENT	BMUNIT01	2001-11-03 09:35	450	2001-11-03 12:45	450
MIL	TAGENT	BMUNIT04	2001-11-03 06:30	-200	2001-11-03 07:00	-220

*BC1.A.1.4 **Bid-Offer Data***

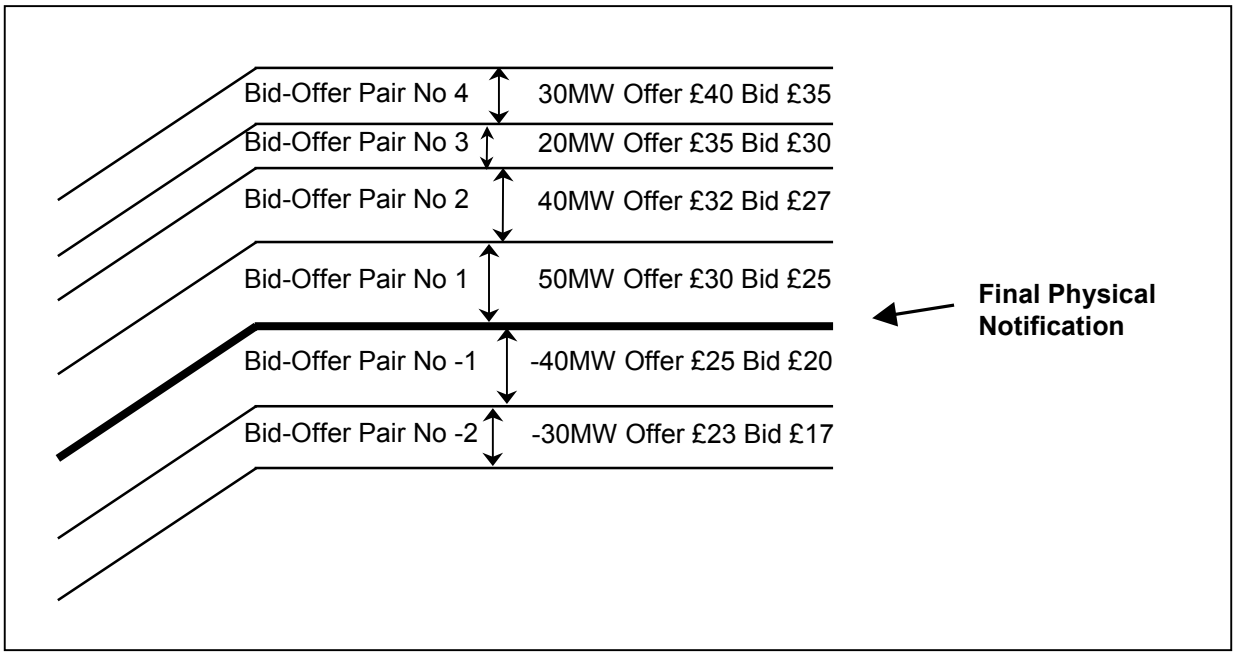
For each **BM Unit** for each **Settlement Period**:

Up to 10 Bid-Offer Pairs as defined in the **BSC.**

An example of the format of data is shown below.

Data	Name	BMU name	Time from	Time to	Pair ID	From Level (MW)	To Level (MW)	Offer (£/ MWhr)	Bid (£/ MWhr)
BOD	TAGENT	BMUNIT01	2000-10-28 12:00	2000-10-28 13:30	4	30	30	40	35
BOD	TAGENT	BMUNIT01	2000-10-28 12:00	2000-10-28 13:30	3	20	20	35	30
BOD	TAGENT	BMUNIT01	2000-10-28 12:00	2000-10-28 13:30	2	40	40	32	27
BOD	TAGENT	BMUNIT01	2000-10-28 12:00	2000-10-28 13:30	1	50	50	30	25
BOD	TAGENT	BMUNIT01	2000-10-28 12:00	2000-10-28 13:30	-1	-40	-40	25	20
BOD	TAGENT	BMUNIT01	2000-10-28 12:00	2000-10-28 13:30	-2	-30	-30	23	17

This example of Bid-Offer data is illustrated graphically below:-



*BC1.A.1.5 **Dynamic Parameters***

The **Dynamic Parameters** comprise:

- Up to three Run-Up Rate(s) and up to three Run-Down Rate(s), expressed in MW/minute and associated Run-Up Elbow(s) and Run-Down Elbow(s), expressed in MW for output and the same for input. It should be noted that Run-Up Rate(s) are applicable to a MW figure becoming more positive;

- Notice to Deviate from Zero (NDZ) output or input, being the notification time required for a **BM Unit** to start importing or exporting energy, from a zero **Physical Notification** level as a result of a **Bid-Offer Acceptance**, expressed in minutes;

- Notice to Deliver Offers (NTO) and Notice to Deliver Bids (NTB), expressed in minutes, indicating the notification time required for a **BM Unit** to start delivering Offers and Bids respectively from the time that the **Bid-Offer Acceptance** is issued. In the case of a **BM Unit** comprising a **Genset**, NTO and NTB will be set to a maximum period of two minutes;

- Minimum Zero Time (MZT), being either the minimum time that a **BM Unit** which has been exporting must operate at zero or be importing, before returning to exporting or the minimum time that a **BM Unit** which has been importing must operate at zero or be exporting before returning to importing, as a result of a **Bid-Offer Acceptance**, expressed in minutes;

- Minimum Non-Zero Time (MNZT), expressed in minutes, being the minimum time that a **BM Unit** can operate at a non-zero level as a result of a **Bid-Offer Acceptance**;

- Stable Export Limit (SEL) expressed in MW at the **Grid Entry Point** or **Grid Supply Point**, as appropriate, being the minimum value at which the **BM Unit** can, under stable conditions, export to the **GB Transmission System**;

- Stable Import Limit (SIL) expressed in MW at the **Grid Entry Point** or **Grid Supply Point**, as appropriate, being the minimum value at which the **BM Unit** can, under stable conditions, import from the **GB Transmission System**;

- Maximum Delivery Volume (MDV), expressed in MWh, being the maximum number of MWhr of Offer (or Bid if MDV is negative) that a particular **BM Unit** may deliver within the associated Maximum Delivery Period (MDP), expressed in minutes, being the maximum period over which the MDV applies.

*BC1.A.1.6 **CCGT Module Matrix***

BC1.A.1.6.1 **CCGT Module Matrix** showing the combination of **CCGT Units** running in relation to any given MW output, in the form of the diagram illustrated below. The **CCGT Module Matrix** is designed to achieve certainty in knowing the number of **CCGT Units** synchronised to meet the **Physical Notification** and to achieve a **Bid-Offer Acceptance**.

BC1.A.1.6.2 In the case of a **Range CCGT Module**, and if the **Generator** so wishes, a request for the single **Grid Entry Point** at which power is provided from the **Range CCGT Module** to be changed in accordance with the provisions of BC1.A.1.6.4 below:-

CCGT Module Matrix example form

CCGT MODULE ACTIVE POWER	**CCGT GENERATING UNITS*** AVAILABLE								
	1st GT	2nd GT	3rd GT	4th GT	5th GT	6th GT	1st ST	2nd ST	3rd ST
MW	**ACTIVE POWER OUTPUT**								
	150	150	150				100		
0MW to 150MW	/								
151MW to 250MW	/						/		
251MW to 300MW	/	/							
301MW to 400MW	/	/					/		
401MW to 450MW	/	/	/						
451MW to 550MW	/	/	/				/		

* as defined in the Glossary and Definitions and not limited by BC1.2

BC1.A.1.6.3 In the absence of the correct submission of a **CCGT Module Matrix** the last submitted (or deemed submitted) **CCGT Module Matrix** shall be taken to be the **CCGT Module Matrix** submitted hereunder.

BC1.A.1.6.4 The data may also include in the case of a **Range CCGT Module**, a request for the **Grid Entry Point** at which the power is provided from the **Range CCGT Module** to be changed with effect from the beginning of the following **Operational Day** to another specified single **Grid Entry Point** (there can be only one) to that being used for the current **Operational Day**. **NGC** will respond to this request by 1600 hours on the day of receipt of the request. If **NGC** agrees to the request (such agreement not to be unreasonably withheld), the **Generator** will operate the **Range CCGT Module** in accordance with the request. If **NGC** does not agree, the **Generator** will, if it produces power from that **Range CCGT Module**, continue to provide power from the **Range CCGT Module** to the **Grid Entry Point** being used at the time of the request. The request can only be made up to 1100 hours in respect of the following **Operational Day**. No subsequent request to change can be made after 1100 hours in respect of the following **Operational Day**. Nothing in this paragraph shall prevent the busbar at the **Grid Entry Point** being operated in separate sections.

BC1.A.1.6.5 The principles set out in PC.A.3.2.3 apply to the submission of a **CCGT Module Matrix** and accordingly the **CCGT Module Matrix** can only be amended as follows:-

(a) Normal CCGT Module

if the **CCGT Module** is a **Normal CCGT Module**, the **CCGT Units** within that **CCGT Module** can only be amended such that the **CCGT Module** comprises different **CCGT Units** if **NGC** gives its prior consent in writing. Notice of the wish to amend the **CCGT Units** within such a **CCGT Module** must be given at least 6 months before it is wished for the amendment to take effect;

(b) Range CCGT Module

if the **CCGT Module** is a **Range CCGT Module**, the **CCGT Units** within that **CCGT Module** can only be amended such that the **CCGT Module** comprises different **CCGT Units** for a particular **Operational Day** if the relevant notification is given by 1100 hours on the day prior to the **Operational Day** in which the amendment is to take effect. No subsequent amendment may be made to the **CCGT Units** comprising the **CCGT Module** in respect of that particular **Operational Day**.

BC1.A.1.6.6 In the case of a **CCGT Module Matrix** submitted (or deemed to be submitted) as part of the other data for **CCGT Modules**, the output of the **CCGT Module** at any given instructed MW output must reflect the details given in the **CCGT Module Matrix**. It is accepted that in cases of change in MW in response to instructions issued by **NGC** there may be a transitional variance to the conditions reflected in the **CCGT Module Matrix**. In achieving an instruction the range of number of **CCGT Units** envisaged in moving from one MW output level to the other must not be departed from. Each **Generator** shall notify **NGC** as soon as practicable after the event of any such variance. It should be noted that there is a provision above for the **Generator** to revise the **CCGT Module Matrix**, subject always to the other provisions of this **BC1**;

BC1.A.1.6.7 Subject as provided above, **NGC** will rely on the **CCGT Units** specified in such **CCGT Module Matrix** running as indicated in the **CCGT Module Matrix** when it issues an instruction in respect of the **CCGT Module**;

BC1.A.1.6.8 Subject as provided in BC1.A.1.6.5 above, any changes to the **CCGT Module Matrix** must be notified immediately to **NGC** in accordance with the relevant provisions of **BC1**.

BC1.A.1.7 **Cascade Hydro Scheme Matrix**

BC1.A.1.7.1 A **Cascade Hydro Scheme Matrix** showing the performance of individual **Generating Units** forming part of a **Cascade Hydro Scheme** in response to **Bid-Offer Acceptance**. An example table is shown below:

Cascade Hydro Scheme Matrix example form

Plant	Synchronises when offer is greater than……..
Generating Unit 1	…..MW
Generating Unit 2	…..MW
Generating Unit 3	…..MW
Generating Unit 4	…..MW
Generating Unit 5	…..MW

APPENDIX 2

DATA TO BE MADE AVAILABLE BY NGC

BC1.A.2.1 Initial Day Ahead Demand Forecast

Normally by 09:00 hours each day, values (in MW) for each **Settlement Period** of the next following **Operational Day** of the following data items:-

i) Initial forecast of **GB National Demand;**

ii) Initial forecast of **Demand** for a number of predetermined constraint groups.

BC1.A.2.2 Initial Day Ahead Market Information

Normally by 12:00 hours each day, values (in MW) for each **Settlement Period** of the next following **Operational Day** of the following data items:-

i) Initial National **Indicated Margin**

This is the difference between the sum of **BM Unit** MELs and the forecast of **GB Transmission System Demand**.

ii) Initial National **Indicated Imbalance**

This is the difference between the sum of **Physical Notifications** for **BM Units** comprising **Generating Units** (as defined in the Glossary and Definitions and not limited by BC1.2) or **CCGT Modules** and the forecast of **GB Transmission System Demand**.

iii) Forecast of **GB Transmission System Demand.**

BC1.A.2.3 Current Day and Day Ahead Updated Market Information

Data will normally be made available by the times shown below for the associated periods of time:

Target Data Release Time	Period Start Time	Period End Time
02:00	02:00 D0	05:00 D+1
10:00	10:00 D0	05:00 D+1
16:00	05:00 D+1	05:00 D+2
16:30	16:30 D0	05:00 D+1
22:00	22:00 D0	05:00 D+2

In this table, D0 refers to the current day, D+1 refers to the next day and D+2 refers to the day following D+1.

In all cases, data will be ½ hourly average MW values calculated by **NGC**. Information to be released includes:-

National Information

i) National **Indicated Margin**;

ii) National **Indicated Imbalance**;

iii) Updated forecast of **GB Transmission System Demand.**

Constraint Boundary Information (for each Constraint Boundary)

i) **Indicated Constraint Boundary Margin**;

This is the difference between the Constraint Boundary Transfer limit and the difference between the sum of **BM Unit** MELs and the forecast of local **Demand** within the constraint boundary.

ii) Local **Indicated Imbalance**;

This is the difference between the sum of **Physical Notifications** for **BM Units** comprising **Generating Units** (as defined in the Glossary and Definitions and not limited by BC1.2) or **CCGT Modules** and the forecast of local **Demand** within the constraint boundary.

iii) Updated forecast of the local **Demand** within the constraint boundary**.**

< End of BC1 >

BALANCING CODE No 2

POST GATE CLOSURE PROCESS

CONTENTS

(This contents page does not form part of the Grid Code)

BALANCING CODE No 2

POST GATE CLOSURE PROCESS

BC2.1 INTRODUCTION

Balancing Code No 2 (**BC2**) sets out the procedure for:

a) the physical operation of **BM Units** and **Generating Units** in the absence of any instructions from **NGC**;

b) the acceptance by **NGC** of **Balancing Mechanism** Bids and Offers,

c) the calling off by **NGC** of **Ancillary Services**;

d) the issuing and implementation of **Emergency Instructions**; and

e) the issuing by **NGC** of other operational instructions and notifications.

In addition, **BC2** deals with any information exchange between **NGC** and **BM Participants** or specific **Users** that takes place after **Gate Closure**.

In this **BC2**, "consistent" shall be construed as meaning to the nearest integer MW level.

In this **BC2**, references to "a **BM Unit** returning to its **Physical Notification**" shall take account of any **Bid-Offer Acceptances** already issued to the **BM Unit** in accordance with BC2.7 and any **Emergency Instructions** already issued to the **BM Unit** or **Generating Unit** in accordance with BC2.9.

BC2.2 OBJECTIVE

The procedure covering the operation of the **Balancing Mechanism** and the issuing of instructions to **Users** is intended to enable **NGC** as far as possible to maintain the integrity of the **GB Transmission System** together with the security and quality of supply.

Where reference is made in this **BC2** to **Generating Units** (unless otherwise stated) it only applies to:

(a) each **Generating Unit** which forms part of the **BM Unit** of **a Cascade Hydro Scheme**; and

(b) **each Generating Unit** at an **Embedded Exemptable Large Power Station** where the **Bilateral Agreement** specifies that **NGC** reasonably requires compliance with certain provisions of **BC2** on a **Generating Unit** basis.

BC2.3 SCOPE

BC2 applies to **NGC** and to **Users**, which in this **BC2** means:-

(a) **BM Participants;**

(b) **Externally Interconnected System Operators**, and

(c) **Network Operators.**

BC2.4 INFORMATION USED

BC2.4.1 The information which **NGC** shall use, together with the other information available to it, in assessing:-

(a) which bids and offers to accept;

(b) which **BM Units** and/or **Generating Units** to instruct to provide **Ancillary Services**;

(c) the need for and formulation of **Emergency Instructions;** and

(d) other operational instructions and notifications which **NGC** may need to issue

will be:

(a) the **Physical Notification** and **Bid-Offer Data** submitted under **BC1**;

(b) **Export and Import Limits**, **QPNs**, and **Joint BM Unit Data** in respect of that **BM Unit** and/or **Generating Unit** supplied under **BC1** (and any revisions under **BC1** and **BC2** to the data); and

(c) **Dynamic Parameters** submitted or revised under this **BC2.**

BC2.4.2 As provided for in BC1.5.4, **NGC** will monitor the total of the Maximum Export Limit component of the **Export and Import Limits** against forecast **Demand** and the **Operating Margin** and will take account of **Dynamic Parameters** to see whether the anticipated level of **System Margin** is insufficient. This will reflect any changes in **Export and Import Limits** which have been notified to **NGC**, and will reflect any **Demand Control** which has also been so notified. **NGC** may issue new or revised **GB Transmission System Warnings – Inadequate System Margin** or **High Risk of Demand Reduction** in accordance with BC1.5.4.

BC2.5 PHYSICAL OPERATION OF **BM UNITS**

BC2.5.1 Accuracy of **Physical Notifications**

As described in BC1.4.2(a), **Physical Notifications** must represent the **BM Participant's** best estimate of expected input or output of **Active Power** and shall be prepared in accordance with **Good Industry Practice**. Each **BM Participant** must, applying **Good Industry Practice**, ensure that each of its **BM Units** follows the **Physical Notification** in respect of that **BM Unit** (and each of its **Generating Units** follows the **Physical Notification** in the case of **Physical Notifications** supplied under BC1.4.2(a)(2)) prevailing at **Gate Closure** (the data in which will be utilised in producing the **Final Physical Notification Data** in accordance with the **BSC**) subject to:

(a) variations arising from the issue of **Bid-Offer Acceptances** which have been confirmed by the **BM Participant**;

(b) instructions by **NGC** in relation to that **BM Unit** (or a **Generating Unit**) which require, or compliance with which would result in, a variation in output or input of that **BM Unit** (or a **Generating Unit**); or

(c) any variations arising from compliance with provisions of **BC1**, **BC2** or **BC3** which provide to the contrary,

(which in each case gives rise to an obligation (applying **Good Industry Practice**) to follow such **Physical Notification** as amended by such variations and/or instructions), unless in relation to any such obligation it is prevented from so doing as a result of an unavoidable event (existing or anticipated) in relation to that **BM Unit** (or a **Generating Unit**) which requires a variation in output or input of that **BM Unit** (or a **Generating Unit**). Examples (on a non-exhaustive basis) of such an unavoidable event are plant breakdowns, events requiring a variation of input or output on safety grounds (relating to personnel or plant), events requiring a variation of input or output to maintain compliance with the relevant Statutory Water Management obligations and uncontrollable variations of input of **Active Power**.

Any anticipated variation in input or output from the **Physical Notification** in respect of that **BM Unit** (or a **Generating Unit**) prevailing at **Gate Closure** (except for variations arising from the issue of **Bid-Offer Acceptances** or instructions by **NGC** as outlined above) for any **BM Unit** (or a **Generating Unit**) post **Gate Closure** must be notified to **NGC** without delay by the relevant **BM Participant** (or the relevant person on its behalf). Implementation of this notification should normally be achieved by the submission of revisions to the **Export and Import Limits** in accordance with BC2.5.3 below.

BC2.5.2 **Synchronising** and **De-Synchronising** times

BC2.5.2.1 The **Final Physical Notification Data** provides indicative **Synchronising** and **De-Synchronising** times to **NGC** in respect of any **BM Unit** which is **De-Synchronising** or is anticipated to be **Synchronising** post **Gate Closure**.

Any delay of greater than five minutes to the **Synchronising** or any advancement of greater than five minutes to the **De-Synchronising** of a **BM Unit** must be notified to **NGC** without delay by the submission of a revision of the **Export and Import Limits**.

BC2.5.2.2 Except in the circumstances provided for in BC2.5.2.3, BC2.5.2.4, BC2.5.5.1 or BC2.9, no **BM Unit** (nor a **Generating Unit**) is to be **Synchronised** or **De-Synchronised** unless:-

(a) a **Physical Notification** had been submitted to **NGC** prior to **Gate Closure** indicating that a **Synchronisation** or **De-Synchronisation** is to occur; or

(b) **NGC** has issued a **Bid-Offer Acceptance** requiring **Synchronisation** or **De-Synchronisation** of that **BM Unit** (or a **Generating Unit**).

BC2.5.2.3 **BM Participants** must only **Synchronise** or **De-Synchronise BM Units** (or a **Generating Unit**);

(a) at the times indicated to **NGC**, or

(b) at times consistent with variations in output or input arising from provisions described in BC2.5.1,

(within a tolerance of +/- 5 minutes) or unless that occurs automatically as a result of intertrip schemes or **Low Frequency Relay** operations or an **Ancillary Service**

pursuant to an **Ancillary Services Agreement**. For a **BM Unit** in relation to which the intertrip has been instructed to be switched into service under BC2.10 in order to protect the **GB Transmission System**, if it is **De-Synchronised** due to an operation of the intertrip that is not due to a fault at the **BM Unit** then a **Bid-Offer Acceptance** will be treated as having been issued. This will reflect the operation of the intertrip in order to form the **Bid-Offer Acceptance** data to be given to the **BMRA** under the **BSC**.

BC2.5.2.4 **De-Synchronisation** may also take place without prior notification to **NGC** as a result of plant breakdowns or if it is done purely on safety grounds (relating to personnel or plant). If that happens **NGC** must be informed immediately that it has taken place and a revision to **Export and Import Limits** must be submitted in accordance with BC2.5.3.3. Following any **De-Synchronisation** occurring as a result of plant failure, no **Synchronisation** of that **BM Unit** (or a **Generating Unit**) is to take place without **NGC's** agreement, such agreement not to be unreasonably withheld.

In the case of **Synchronisation** following an unplanned **De-Synchronisation** within the preceding 15 minutes, a minimum of 5 minutes notice of its intention to **Synchronise** should normally be given to **NGC** (via a revision to **Export and Import Limits**)**.** In the case of any other unplanned **De-Synchronisation** where the **User** plans to **Synchronise** before the expiry of the current **Balancing Mechanism** period, a minimum of 15 minutes notice of **Synchronisation** should normally be given to **NGC** (via a revision to **Export and Import Limits**). In addition, the rate at which the **BM Unit** is returned to its **Physical Notification** is not to exceed the limits specified in **BC1**, Appendix 1 without **NGC's** agreement.

NGC will either agree to the **Synchronisation** or issue a **Bid-Offer Acceptance** in accordance with BC2.7 to delay the **Synchronisation. NGC** may agree to an earlier **Synchronisation** if **System** conditions allow.

BC2.5.2.5 Notification of Times to **Network Operators**

NGC will make changes to the **Synchronising** and **De-Synchronising** times available to each **Network Operator**, but only relating to **BM Units Embedded** within its **User System** and those **BM Units** directly connected to the **GB Transmission System** which **NGC** has identified under **OC2** and/or **BC1** as being those which may, in the reasonable opinion of **NGC**, affect the integrity of that **User System** and shall inform the relevant **BM Participant** that it has done so, identifying the **BM Unit** concerned.

Each **Network Operator** must notify **NGC** of any changes to its **User System** Data as soon as practicable in accordance with BC1.6.1(c).

BC2.5.3 Revisions to **BM Unit Data**

Following **Gate Closure** for any **Settlement Period,** no changes to the **Physical Notification**, to the **QPN** data or to **Bid-Offer Data** for that **Settlement Period** may be submitted to **NGC**.

BC2.5.3.1 At any time, any **BM Participant** (or the relevant person on its behalf) may, in respect of any of its **BM Units**, submit to **NGC** the data listed in **BC1**, Appendix 1 under the heading of **Dynamic Parameters** from the **Control Point** of its **BM Unit** to amend the data already held by **NGC** (including that previously submitted under this BC2.5.3.1) for use in preparing for and operating the **Balancing Mechanism**. The change will take effect from the time that it is received by **NGC**. For the avoidance of doubt, the **Dynamic Parameters** submitted to **NGC** under BC1.4.2(e) are not used

within the current **Operational Day**. The **Dynamic Parameters** submitted under this BC2.5.3.1 shall reasonably reflect the true current operating characteristics of the **BM Unit** and shall be prepared in accordance with **Good Industry Practice**.

BC2.5.3.2 Revisions to **Export and Import Limits** or **Other Relevant Data** supplied (or revised) under **BC1** must be notified to **NGC** without delay as soon as any change becomes apparent to the **BM Participant** (or the relevant person on its behalf) via the **Control Point** for the **BM Unit** (or a **Generating Unit**) to ensure that an accurate assessment of **BM Unit** (or a **Generating Unit**) capability is available to **NGC** at all times. These revisions should be prepared in accordance with **Good Industry Practice** and may be submitted by use of electronic data communication facilities or by telephone.

BC2.5.3.3 Revisions to **Export and Import Limits** must be made by a **BM Participant** (or the relevant person on its behalf) via the **Control Point** in the event of any **De-Synchronisation** of a **BM Unit** (or a **Generating Unit**) in the circumstances described in BC2.5.2.4 if the **BM Unit** (or a **Generating Unit**) is no longer available for any period of time. Revisions must also be submitted in the event of plant failures causing a reduction in input or output of a **BM Unit** (or a **Generating Unit**) even if that does not lead to **De-Synchronisation**. Following the correction of a plant failure, the **BM Participant** (or the relevant person on its behalf) must notify **NGC** via the **Control Point** of a revision to the **Export and Import Limits**, if appropriate, of the **BM Unit** (or a **Generating Unit**), using reasonable endeavours to give a minimum of 5 minutes notice of its intention to return to its **Physical Notification**. The rate at which the **BM Unit** (or a **Generating Unit**) is returned to its **Physical Notification** is not to exceed the limits specified in **BC1**, Appendix 1 without **NGC's** agreement.

BC2.5.4 Operation in the absence of instructions from **NGC**

In the absence of any **Bid-Offer Acceptances**, **Ancillary Service** instructions issued pursuant to BC2.8 or **Emergency Instructions** issued pursuant to BC2.9:

(a) as provided for in BC3, each **Synchronised Genset** producing **Active Power** must operate at all times in **Limited Frequency Sensitive Mode** (unless instructed in accordance with BC3.5.4 to operate in **Frequency Sensitive Mode**);

(b) in the absence of any Mvar **Ancillary Service** instructions, the Mvar output of each **Synchronised Genset** should be 0 Mvar upon **Synchronisation** at the circuit-breaker where the **Genset** is **Synchronised**;

(c) the excitation system, unless otherwise agreed with **NGC**, must be operated only in its constant terminal voltage mode of operation with VAR limiters in service, with any constant **Reactive Power** output control mode or constant **Power Factor** output control mode always disabled, unless agreed otherwise with **NGC**. In the event of any change in **System** voltage, a **Generator** must not take any action to override automatic Mvar response which is produced as a result of constant terminal voltage mode of operation of the automatic excitation control system unless instructed otherwise by **NGC** or unless immediate action is necessary to comply with **Stability Limits** or unless constrained by plant operational limits or safety grounds (relating to personnel or plant);

(d) In the absence of any Mvar **Ancillary Service** instructions, the Mvar output of each **Genset** should be 0 Mvar immediately prior to **De-Synchronisation** at the circuit-breaker where the **Genset** is **Synchronised**, other than in the case of a rapid unplanned **De-Synchronisation**.

(e) a **Generator** should at all times operate its **CCGT Units** in accordance with the applicable **CCGT Module Matrix**;

(f) in the case of a **Range CCGT Module**, a **Generator** must operate that **CCGT Module** so that power is provided at the single **Grid Entry Point** identified in the data given pursuant to PC.A.3.2.1 or at the single **Grid Entry Point** to which **NGC** has agreed pursuant to BC1.4.2(f);

(g) in the event of the **System Frequency** being above 50.3Hz or below 49.7Hz, **BM Participants** must not commence any reasonably avoidable action to regulate the input or output of any **BM Unit** in a manner that could cause the **System Frequency** to deviate further from 50Hz without first using reasonable endeavours to discuss the proposed actions with **NGC**. **NGC** shall either agree to these changes in input or output or issue a **Bid-Offer Acceptance** in accordance with BC2.7 to delay the change.

BC2.5.5 Commencement or Termination of Participation in the **Balancing Mechanism**

BC2.5.5.1 In the event that a **BM Participant** in respect of a **BM Unit** with a **Demand Capacity** with a magnitude of less than 50MW in England and Wales or less than 5MW in Scotland or comprising **Generating Units** (as defined in the Glossary and Definitions and not limited by BC2.2) and/or **CCGT Modules** at a **Small Power Station** notifies **NGC** at least 30 days in advance that from a specified **Operational Day** it will:

(a) no longer submit **Bid-Offer Data** under BC1.4.2(d), then with effect from that **Operational Day** that **BM Participant** no longer has to meet the requirements of BC2.5.1 nor the requirements of CC6.5.8(b) in relation to that **BM Unit**. Also, with effect from that **Operational Day**, any defaulted **Physical Notification** and defaulted **Bid-Offer Data** in relation to that **BM Unit** arising from the **Data Validation, Consistency and Defaulting Rules** will be disregarded and the provisions of BC2.5.2 will not apply;

(b) submit **Bid-Offer Data** under BC1.4.2(d), then with effect from that **Operational Day** that **BM Participant** will need to meet the requirements of BC2.5.1 and the requirements of CC6.5.8(b) in relation to that **BM Unit**.

BC2.5.5.2 In the event that a **BM Participant** in respect of a **BM Unit** with a **Demand Capacity** with a magnitude of 50MW or greater in England and Wales or 5MW or greater in Scotland or comprising **Generating Units** (as defined in the Glossary and Definitions and not limited by BC2.2) and/or **CCGT Modules** at a **Medium Power Station** or **Large Power Station** notifies **NGC** at least 30 days in advance that from a specified **Operational Day** it will:

(a) no longer submit **Bid-Offer Data** under BC1.4.2(d), then with effect from that **Operational Day** that **BM Participant** no longer has to meet the requirements of CC6.5.8(b) in relation to that **BM Unit**; Also, with effect from that **Operational Day**, any defaulted **Bid-Offer Data** in relation to that **BM Unit** arising from the **Data Validation, Consistency and Defaulting Rules** will be disregarded;

(b) submit **Bid-Offer Data** under BC1.4.2(d), then with effect from that **Operational Day** that **BM Participant** will need to meet the requirements of CC6.5.8(b) in relation to that **BM Unit**.

BC2.6 COMMUNICATIONS

Electronic communications are always conducted in GMT. However, the input of data and display of information to **Users** and **NGC** and all other communications are conducted in London time.

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

(a) With the exception of BC2.6.1(c) below, **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 **NGC** 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 **NGC** within two minutes of the issue of the **Bid-Offer Acceptance**, then **NGC** 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 **NGC** 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), **NGC** 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.

BC2.6.2 Communication with **Control Points** in Emergency Circumstances

NGC will issue **Emergency Instructions** direct to the **Control Point** for each **BM Unit** [or **Generating Unit**] in **Great Britain**. **Emergency Instructions** to a **Control Point** will normally be given by telephone (and will include an exchange of operator names).

BC2.6.3 Communication with **Network Operators** in Emergency Circumstances

NGC will issue **Emergency Instructions** direct to the **Network Operator** at each **Control Centre** in relation to special actions and **Demand Control**. **Emergency Instructions** to a **Network Operator** will normally be given by telephone (and will include an exchange of operator names). **OC6** contains further provisions relating to **Demand Control** instructions.

BC2.6.4 Communication with **Externally Interconnected System Operators** in Emergency Circumstances

NGC will issue **Emergency Instructions** directly to the **Externally Interconnected System Operator** at each **Control Centre**. **Emergency Instructions** to an **Externally Interconnected System Operator** will normally be given by telephone (and will include an exchange of operator names).

BC2.6.5 Communications during planned outages of electronic data communication facilities

Planned Maintenance Outages will normally be arranged to take place during periods of low data transfer activity. Upon any such **Planned Maintenance Outage** in relation to a post **Gate Closure** period:-

(a) **BM Participants** should operate in relation to any period of time in accordance with the **Physical Notification** prevailing at **Gate Closure** current at the time of the start of the **Planned Maintenance Outage** in relation to each such period of time. Such operation shall be subject to the provisions of BC2.5.1, which will apply as if set out in this BC2.6.5. No further submissions of **BM Unit Data** (other than data specified in BC1.4.2(c) and BC1.4.2(e)) should be attempted or **Generating Unit Data**. Plant failure or similar problems causing significant deviation from **Physical Notification** should be notified to **NGC** by the submission of a revision to **Export and Import Limits** in relation to the **BM Unit** or **Generating Unit** so affected;

(b) during the outage, revisions to the data specified in BC1.4.2(c) and BC1.4.2(e) may be submitted. Communication between **Users' Control Points** and **NGC** during the outage will be conducted by telephone;

(c) **NGC** will issue **Bid-Offer Acceptances** by telephone; and

(d) no data will be transferred from **NGC** to the **BMRA** until the communication facilities are re-established.

(e) The provisions of BC2.9.7 may also be relevant.

BC2.7 BID-OFFER ACCEPTANCES

BC2.7.1 Acceptance of bids and offers by **NGC**

Bid-Offer Acceptances may be issued to the **Control Point** at any time following **Gate Closure.** Any **Bid-Offer Acceptance** will be consistent with the **Dynamic Parameters, QPNs, Export and Import Limits**, and **Joint BM Unit Data** of the **BM Unit** in so far as the **Balancing Mechanism** timescales will allow (see BC2.7.2).

(a) **NGC** is entitled to assume that each **BM Unit** is available in accordance with the **BM Unit Data** submitted unless and until it is informed of any changes.

(b) **Bid-Offer Acceptances** sent to the **Control Point** will specify the data necessary to define a MW profile to be provided (ramp rate break-points are not normally explicitly sent to the **Control Point**) and to be achieved consistent with the respective **BM Unit's Export and Import Limits, QPNs** and **Joint BM Unit Data** provided or modified under **BC1** or **BC2,** and **Dynamic Parameters** given under BC2.5.3 or, if agreed with the relevant **User,** such rate within those **Dynamic Parameters** as is specified by **NGC** in the **Bid-Offer Acceptances**.

(c) All **Bid-Offer Acceptances** will be deemed to be at the current "**Target Frequency**", namely where a **Genset** is in **Frequency Sensitive Mode** they refer to target output at **Target Frequency**.

(d) The form of and terms to be used by **NGC** in issuing **Bid-Offer Acceptances** together with their meanings are set out in Appendix 1 in the form of a non-exhaustive list of examples.

BC2.7.2 Consistency with **Export and Import Limits, QPNs** and **Dynamic Parameters**

(a) **Bid-Offer Acceptances** will be consistent with the **Export and Import Limits**, **QPNs**, and **Joint BM Unit Data** provided or modified under **BC1** or **BC2** and the **Dynamic Parameters** provided or modified under **BC2**. **Bid-Offer Acceptances** may also recognise **Other Relevant Data** provided or modified under **BC1** or **BC2**

(b) In the case of consistency with **Dynamic Parameters** this will be limited to the time until the end of the **Settlement Period** for which **Gate Closure** has most recently occurred. If **NGC** intends to issue a **Bid-Offer Acceptance** covering a period after the end of the **Settlement Period** for which **Gate Closure** has most recently occurred, based upon the then submitted **Dynamic Parameters**, **QPN's**, **Export and Import Limits**, **Bid-Offer Data** and **Joint BM Unit Data** applicable to that period, **NGC** will indicate this to the **BM Participant** at the **Control Point** for the **BM Unit**. The intention will then be reflected in the issue of a **Bid-Offer Acceptance** to return the **BM Unit** to its previously notified **Physical Notification** after the relevant **Gate Closure** provided the submitted data used to formulate this intention has not changed and subject to **System** conditions which may affect that intention. Subject to that, assumptions regarding **Bid-Offer Acceptances** may be made by **BM Participants** for **Settlement Periods** for which **Gate Closure** has not yet occurred when assessing consistency with **Dynamic Parameters** in **Settlement Periods** for which **Gate Closure** has occurred. If no such subsequent **Bid–Offer Acceptance** is issued, the original **Bid-Offer Acceptance** will include an instantaneous return to **Physical Notification** at the end of the **Balancing Mechanism** period.

BC2.7.3 Confirmation and Rejection of Acceptances

Bid-Offer Acceptances may only be rejected by a **BM Participant** :-

(a) on safety grounds (relating to personnel or plant) as soon as reasonably possible and in any event within five minutes; or

(b) because they are not consistent with the **Export and Import Limits, QPNs**, **Dynamic Parameters** or **Joint BM Unit Data** applicable at the time of issue of the **Bid-Offer Acceptance**.

A reason must always be given for rejection by telephone.

Where a **Bid-Offer Acceptance** is not confirmed within two minutes or is rejected, **NGC** will seek to contact the **Control Point** for the **BM Unit**. **NGC** must then, within 15 minutes of issuing the **Bid-Offer Acceptance**, withdraw the **Bid-Offer Acceptance** or log the **Bid-Offer Acceptance** as confirmed. **NGC** will only log a rejected **Bid-Offer Acceptance** as confirmed following discussion and if the reason given is, in **NGC's** reasonable opinion, not acceptable and **NGC** will inform the **BM Participant** accordingly.

BC2.7.4 Action Required from **BM Participants**

(a) Each **BM Participant** in respect of its **BM Units** will comply in accordance with BC2.7.1 with all **Bid-Offer Acceptances** given by **NGC** with no more than the delay allowed for by the **Dynamic Parameters** unless the **BM Unit** has given notice to **NGC** under the provisions of BC2.7.3 regarding non-acceptance of a **Bid-Offer Acceptance**.

(b) Where a **BM Unit's** input or output changes in accordance with a **Bid-Offer Acceptance** issued under BC2.7.1, such variation does not need to be notified to **NGC** in accordance with BC2.5.1.

(c) In the event that while carrying out the **Bid-Offer Acceptance** an unforeseen problem arises caused by safety reasons (relating to personnel or plant), **NGC** must be notified immediately by telephone and this may lead to revision of **BM Unit Data** in accordance with BC2.5.3

BC2.7.5 Additional Action Required from **Generators**

(a) When complying with **Bid-Offer Acceptances** for a **CCGT Module** a **Generator** will operate its **CCGT Units** in accordance with the applicable **CCGT Module Matrix**.

(b) When complying with **Bid-Offer Acceptances** for a **CCGT Module** which is a **Range CCGT Module**, a **Generator** must operate that **CCGT Module** so that power is provided at the single **Grid Entry Point** identified in the data given pursuant to PC.A.3.2.1 or at the single **Grid Entry Point** to which **NGC** has agreed pursuant to BC1.4.2 (f).

(c) On receiving a new MW **Bid-Offer Acceptance**, no tap changing shall be carried out to change the Mvar output unless there is a new Mvar **Ancillary Service** instruction issued pursuant to BC2.8.

BC2.8 ANCILLARY SERVICES

This section primarily covers the call-off of **System Ancillary Services**. The provisions relating to **Commercial Ancillary Services** will normally be covered in the relevant **Ancillary Services Agreement**.

BC2.8.1 Call-off of **Ancillary Services** by **NGC**

(a) **Ancillary Service** instructions may be issued at any time.

(b) **NGC** is entitled to assume that each **BM Unit** (or **Generating Unit)** is available in accordance with the **BM Unit Data** (or the **Generating Unit Data**) and data contained in the **Ancillary Services Agreement** unless and until it is informed of any changes.

(c) **Frequency** control instructions may be issued in conjunction with, or separate from, a **Bid-Offer Acceptance**.

(d) The form of and terms to be used by **NGC** in issuing **Ancillary Service** instructions together with their meanings are set out in Appendix 2 in the form of a non-exhaustive list of examples including **Reactive Power** and associated instructions.

(e) In the case of **Generating Units** that do not form part of a **BM Unit** any change in **Active Power** as a result of, or required to enable, the provision of an **Ancillary Service** will be dealt with as part of that **Ancillary Service Agreement** and/or provisions under the **CUSC**.

BC2.8.2 Consistency with **Export and Import Limits, QPNs** and **Dynamic Parameters**

Ancillary Service instructions will be consistent with the **Export and Import Limits**, **QPNs**, and **Joint BM Unit Data** provided or modified under **BC1** or **BC2** and the **Dynamic Parameters** provided or modified under **BC2**. **Ancillary Service** instructions may also recognise **Other Relevant Data** provided or modified under **BC**1 or **BC2**

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 Agreement** and a reason must be given immediately for non-acceptance.

(b) The issue of **Ancillary Service** instructions for **Reactive Power** will be made with due regard to any resulting change in **Active Power** output. The instruction may be rejected if it conflicts with any **Bid-Offer Acceptance** issued in accordance with BC2.7 or with the **Physical Notification**.

(c) Where **Ancillary Service** instructions relating to **Active Power** and **Reactive Power** are given together, and to achieve the **Reactive Power** output would

cause the **BM Unit** to operate outside **Dynamic Parameters** as a result of the **Active Power** instruction being met at the same time, then the timescale of implementation of the **Reactive Power** instruction may be extended to be no longer than the timescale for implementing the **Active Power** instruction but in any case to achieve the Mvar **Ancillary Service** instruction as soon as possible.

BC2.8.4 Action Required from **BM Units**

(a) Each **BM Unit** (or **Generating Unit)** will comply in accordance with BC2.8.1 with all **Ancillary Service** instructions relating to **Reactive Power** properly given by **NGC** within 2 minutes or such longer period as **NGC** may instruct, and all other **Ancillary Service** instructions without delay, unless the **BM Unit** or **Generating Unit** has given notice to **NGC** under the provisions of BC2.8.3 regarding non-acceptance of **Ancillary Service** instructions.

(b) Each **BM Unit** may deviate from the profile of its **Final Physical Notification Data,** as modified by any **Bid-Offer Acceptances** issued in accordance with BC2.7.1, only as a result of responding to **Frequency** deviations when operating in **Frequency Sensitive Mode** in accordance with the **Ancillary Services Agreement**.

(c) Each **Generating Unit** that does not form part of a **BM Unit** may deviate from the profile of its **Final Physical Notification Data** where agreed by **NGC** and the **User**, including but not limited to, as a result of providing **an Ancillary Service** in accordance with the **Ancillary Service Agreement**.

(d) In the event that while carrying out the **Ancillary Service** instructions an unforeseen problem arises caused by safety reasons (relating to personnel or plant), **NGC** must be notified immediately by telephone and this may lead to revision of **BM Unit Data** or **Generating Unit Data** in accordance with BC2.5.3.

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 **GB 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 **GB 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** (as defined in the Glossary and Definitions and not limited by BC2.2) 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** and **Generating Units** in **Great Britain**, **Emergency Instructions** will be issued by **NGC** direct to the **User** at the **Control Point** for the **BM Unit** or **Generating Unit** and may require an action or response which is outside its **Other Relevant Data**, **QPN**s, 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**" except in the case of **Maximum Generation Service** instructed by electronic data communication facilities where the instruction will be issued in accordance with the provisions of the **Maximum Generation Service Agreement**.

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** or in respect of a **Generating Unit** that does not form part of a **BM Unit,** 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** pursuant to a **Maximum Generation Service Agreemen**t payment will be dealt with in accordance with the **CUSC** and the **Maximum Generation Service Agreement**.

BC2.9.3 Examples of **Emergency Instructions**

BC2.9.3.1 In the case of a **BM Unit** or a **Generating Unit**, **Emergency Instructions** may include an instruction for the **BM Unit** or the **Generating 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** (as defined in the Glossary and Definitions and not limited by BC2.2); 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 4.2 of the **CUSC**; or

(f) an instruction for the operation of **Generating Units** within a **Cascade Hydro Scheme** (on the basis of the additional information supplied in relation to individual **Generating Units**) when emergency circumstances prevail (as determined by **NGC** in **NGC's** reasonable opinion).

BC2.9.3.3 Instructions to **Network Operators** relating to the **Operational Day** may include:

(a) a requirement for **Demand** reduction and disconnection or restoration pursuant to **OC6**;

(b) an instruction to effect a load transfer between **Grid Supply Points**;

(c) an instruction to switch in a **System to Demand Intertrip Scheme**;

(d) an instruction to split a network;

(e) an instruction to disconnect an item of **Plant** or **Apparatus** from the **System**.

BC2.9.4 Maintaining adequate **System** and **Localised NRAPM (Negative Reserve Active Power Margin)**

BC2.9.4.1 Where **NGC** is unable to satisfy the required **System NRAPM** or **Localised NRAPM** by following the process described in BC1.5.5, **NGC** will issue an **Emergency Instruction** to exporting **BM Units** for **De-Synchronising** on the basis of **Bid-Offer Data** submitted to **NGC** in accordance with BC1.4.2(d).

BC2.9.4.2 In the event that **NGC** is unable to differentiate between exporting **BM Units** according to **Bid-Offer Data**, **NGC** will instruct a **BM Participant** to **Shutdown** a specified exporting **BM Unit** for such period based upon the following factors:

(a) effect on power flows (resulting in the minimisation of transmission losses);

(b) reserve capability;

(c) **Reactive Power** worth;

(d) **Dynamic Parameters**;

(e) in the case of **Localised NRAPM**, effectiveness of output reduction in the management of the **System Constraint**.

BC2.9.4.3 Where **NGC** is still unable to differentiate between exporting **BM Units**, having considered all the foregoing, **NGC** will decide which exporting **BM Unit** to **Shutdown** by the application of a quota for each **BM Participant** in the ratio of each **BM Participant's Physical Notifications**.

BC2.9.4.4 Other than as provided in BC2.9.4.5 and BC2.9.4.6 below, in determining which exporting **BM Units** to **De-Synchronise** under this BC2.9.4, **NGC** shall not consider in such determination (and accordingly shall not instruct to **De-Synchronise**) any **Generating Unit** (as defined in the Glossary and Definitions and not limited by BC2.2) within an **Existing Gas Cooled Reactor Plant**.

BC2.9.4.5 **NGC** shall be permitted to instruct a **Generating Unit** (as defined in the Glossary and Definitions and not limited by BC2.2) within an **Existing AGR Plant** to **De-Synchronise** if the relevant **Generating Unit** within the **Existing AGR Plant** has failed to offer to be flexible for the relevant instance at the request of **NGC** within the **Existing AGR Plant Flexibility Limit.**

BC2.9.4.6 Notwithstanding the provisions of BC2.9.4.5 above, if the level of **System NRAPM** (taken together with **System** constraints) or **Localised NRAPM** is such that it is not possible to avoid instructing a **Generating Unit** (as defined in the Glossary and Definitions and not limited by BC2.2) within an **Existing Magnox Reactor Plant** and/or an **Existing AGR Plant** whether or not it has met requests within the **Existing AGR Flexibility Limit** to **De-Synchronise NGC** may, provided the power flow across each **External Interconnection** is either at zero or results in an export of power from the **Total System**, so instruct a **Generating Unit** (as defined in the Glossary and Definitions and not limited by BC2.2) within an **Existing Magnox Reactor Plant** and/or an **Existing AGR Plant** to **De-Synchronise** in the case of **System NRAPM**, in all cases and in the case of **Localised NRAPM**, when the power flow would have a relevant effect.

BC2.9.4.7 When instructing exporting **BM Units** which form part of an **On-Site Generator Site** to reduce generation under this BC2.9.4, **NGC** will not issue an instruction which would reduce generation below the reasonably anticipated **Demand** of the **On-Site Generator Site**. For the avoidance of doubt, it should be noted that the term **"On-Site Generator Site"** only relates to Trading Units which have fulfilled the Class 1 or Class 2 requirements.

BC2.9.5 Maintaining adequate Frequency Sensitive Generation

BC2.9.5.1 If, post **Gate Closure, NGC** determines, in its reasonable opinion, from the information then available to it (including information relating to **Generating Unit** (as defined in the Glossary and Definitions and not limited by BC2.2) breakdown) that the number of and level of **Primary, Secondary** and **High Frequency Response** available from **Gensets** (other than those units within **Existing Gas Cooled Reactor Plant**, which are permitted to operate in **Limited Frequency Sensitive Mode** at all times under BC3.5.3) available to operate in **Frequency Sensitive Mode** is such that it is not possible to avoid **De-Synchronising Existing Gas Cooled Reactor Plant** then provided that:

(a) there are (or, as the case may be, that **NGC** anticipates, in its reasonable opinion, that at the time that the instruction is to take effect there will be) no other **Gensets** generating and exporting on to the **Total System** which are not operating in **Frequency Sensitive Mode** (or which are operating with only a nominal amount in terms of level and duration) (unless, in **NGC's** reasonable opinion, necessary to assist the relief of **System** constraints or necessary as a result of other **System** conditions); and

(b) the power flow across each **External Interconnection** is (or, as the case may be, is anticipated to be at the time that the instruction is to take effect) either at zero or result in an export of power from the **Total System**,

then **NGC** may instruct such of the **Existing Gas Cooled Reactor Plant** to **De-Synchronise** as it is, in **NGC's** reasonable opinion, necessary to **De-Synchronise** and for the period for which the **De-Synchronising** is, in **NGC's** reasonable opinion, necessary.

BC2.9.5.2 If in **NGC's** reasonable opinion it is necessary for both the procedure in BC2.9.4 and that set out in BC2.9.5.1 to be followed in any given situation, the procedure in BC2.9.4 will be followed first, and then the procedure set out in BC2.9.5.1. For the avoidance of doubt, nothing in this sub-paragraph shall prevent either procedure from being followed separately and independently of the other.

BC2.9.6 Emergency Assistance to and from **External Systems**

(a) An **Externally Interconnected System Operator** (in its role as operator of the **External System**) may request that **NGC** takes any available action to increase the **Active Energy** transferred into its **External System**, or reduce the **Active Energy** transferred into the **GB Transmission System** by way of emergency assistance if the alternative is to instruct a demand reduction on all or part of its **External System** (or on the system of an **Interconnector User** using its **External System**). Such request must be met by **NGC** providing this does not require a reduction of **Demand** on the **GB Transmission System**, or lead to a reduction in security on the **GB Transmission System**.

(b) **NGC** may request that an **Externally Interconnected System Operator** takes any available action to increase the **Active Energy** transferred into the **GB Transmission System**, or reduce the **Active Energy** transferred into its **External System** by way of emergency assistance if the alternative is to instruct a **Demand** reduction on all or part of the **GB Transmission System**. Such request must be met by the **Externally Interconnected System Operator** providing this does not require a reduction of **Demand** on its **External System** (or on the system of **Interconnector Users** using its **External System)**, or lead to a reduction in security on such **External System** or system.

BC2.9.7 Unplanned outages of electronic communication and computing facilities

BC2.9.7.1 In the event of an unplanned outage of the electronic data communication facilities or of **NGC**'s associated computing facilities or in the event of a **Planned Maintenance Outage** lasting longer than the planned duration, in relation to a post-**Gate Closure** period **NGC** will, as soon as it is reasonably able to do so, issue a NGC Computing System Failure notification by telephone or such other means agreed between **Users** and **NGC** indicating the likely duration of the outage.

BC2.9.7.2 During the period of any such outage, the following provisions will apply:

(a) **NGC** will issue further **NGC** Computing System Failure notifications by telephone or such other means agreed between **Users** and **NGC** to all **BM Participants** to provide updates on the likely duration of the outage;

(b) **BM Participants** should operate in relation to any period of time in accordance with the **Physical Notification** prevailing at **Gate Closure** current at the time of the computer system failure in relation to each such period of time. Such operation shall be subject to the provisions of BC2.5.1, which will apply as if set out in this BC2.9.7.2. No further submissions of **BM Unit Data** or **Generating Unit Data** (other than data specified in BC1.4.2(c) (**Export and Import Limits**) and BC1.4.2(e) (**Dynamic Parameters**) should be attempted. Plant failure or similar problems causing significant deviation from **Physical**

Notification should be notified to **NGC** by telephone by the submission of a revision to **Export and Import Limits** in relation to the **BM Unit** or **Generating Unit Data** so affected;

(c) Revisions to **Export and Import Limits** and to **Dynamic Parameters** should be notified to **NGC** by telephone and will be recorded for subsequent use;

(d) **NGC** will issue **Bid-Offer Acceptances** by telephone which will be recorded for subsequent use;

(e) No data will be transferred from **NGC** to the **BMRA** until the communication facilities are re-established.

BC2.9.7.3 **NGC** will advise **BM Participants** of the withdrawal of the NGC Computing System Failure notification following the re-establishment of the communication facilities.

BC2.10 OTHER OPERATIONAL INSTRUCTIONS AND NOTIFICATIONS

BC2.10.1 **NGC** may, from time to time, need to issue other instructions or notifications associated with the operation of the **GB Transmission System**.

BC2.10.2 Such instructions or notifications may include**:**

Intertrips

(a) an instruction to switch into or out of service an **Operational Intertripping** scheme;

Tap Positions

(b) a request for a **Genset** step-up transformer tap position (for security assessment);

Tests

(c) an instruction to carry out tests as required under **OC5**, which may include the issue of an instruction regarding the operation of **CCGT Units** within a **CCGT Module** at a **Large Power Station;**

Future **BM Unit** Requirements

(d) a reference to any implications for future **BM Unit** requirements and the security of the **GB Transmission System**, including arrangements for change in output to meet post fault security requirements;

(e) Changes to **Target Frequency**
a notification of a change in **Target Frequency**, which will normally only be 49.95, 50.00, or 50.05Hz but in exceptional circumstances as determined by **NGC** in its reasonable opinion, may be 49.90 or 50.10Hz.

BC2.10.3 Where an instruction or notification under BC2.10.2 (a), (c) or (d) results in a change to the input or output level of the **BM Unit** then **NGC** shall issue a **Bid-Offer Acceptance** or **Emergency Instruction** as appropriate.

BC2.11 LIAISON WITH **GENERATORS** FOR RISK OF TRIP AND **AVR** TESTING

BC2.11.1 A **Generator** at the **Control Point** for any of its **Large Power Stations** may request **NGC's** agreement for one of the **Gensets** at that **Power Station** to be operated under a risk of trip. **NGC's** agreement will be dependent on the risk to the **GB Transmission System** that a trip of the **Genset** would constitute.

BC2.11.2 (a) Each **Generator** at the **Control Point** for any of its **Large Power Stations** will operate its **Synchronised Gensets** with:

(i) **AVRs** in constant terminal voltage mode with VAR limiters in service at all times. **AVR** constant **Reactive Power** or power factor mode should, if installed, be disabled; and

(ii) its generator step-up transformer tap changer selected to manual mode,

unless released from this obligation in respect of a particular **Genset** by **NGC**.

(b) Where a power system stabiliser is fitted as part of an excitation system of a **Genset**, it requires on-load commissioning which must be witnessed by **NGC**. Only when the performance of the power system stabiliser has been approved by **NGC** shall it be switched into service by a **Generator** and then it will be kept in service at all times unless otherwise agreed with **NGC**. Further reference is made to this in CC.6.3.8.

BC2.11.3 A **Generator** at the **Control Point** for any of its **Power Stations** may request **NGC's** agreement for one of its **Gensets** at that **Power Station** to be operated with the **AVR** in manual mode, or power system stabiliser switched out, or VAR limiter switched out. **NGC's** agreement will be dependent on the risk that would be imposed on the **GB Transmission System** and any **User System**. Provided that in any event a **Generator** may take such action as is reasonably necessary on safety grounds (relating to personnel or plant) .

BC2.12 LIAISON WITH **EXTERNALLY INTERCONNECTED SYSTEM OPERATORS**

BC2.12.1 Co-ordination role of **Externally Interconnected System Operators**

(a) The **Externally Interconnected System Operator** will act as the **Control Point** for **Bid-Offer Acceptances** on behalf of **Interconnector Users** and will co-ordinate instructions relating to **Ancillary Services** and **Emergency Instructions** on behalf of **Interconnector Users** using its **External System** in respect of each **Interconnector User's BM Units**.

(b) **NGC** will issue **Bid-Offer Acceptances** and instructions for **Ancillary Services** relating to **Interconnector Users' BM Units** to each **Externally Interconnected System Operator** in respect of each **Interconnector User** using its **External System**.

(c) If, as a result of a reduction in the capability (in MW) of the **External Interconnection**, the total of the **Physical Notifications** and **Bid-Offer Acceptances** issued for the relevant period using that **External Interconnection**, as stated in the **BM Unit Data** exceeds the reduced capability (in MW) of the respective **External Interconnection** in that period then **NGC** shall notify the **Externally Interconnected System Operator** accordingly. The **Externally Interconnected System Operator** should seek a

revision of **Export and Import Limits** from one or more of its **Interconnector Users** for the remainder of the **Balancing Mechanism** period during which **Physical Notifications** cannot be revised.

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 **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.

BC2.A.1.2 For each **BM Unit** the **Bid-Offer Acceptance** will consist of a series of MW figures and associated times.

BC2.A.1.3 The **Bid-Offer Acceptances** relating to **CCGT Modules** will assume that the **CCGT Units** within the **CCGT Module** will operate in accordance with the **CCGT Module Matrix**, as required by **BC1**. The **Bid-Offer Acceptances** relating to **Cascade Hydro Schemes** will assume that the **Generating Unit** forming part of the **Cascade Hydro Scheme** will operate, where submitted, in accordance with the **Cascade Hydro Scheme Matrix** submitted under **BC1**.

BC2.A.1.4 **BID-OFFER ACCEPTANCES** GIVEN BY AUTOMATIC LOGGING DEVICE.

(a) The complete form of the **Bid-Offer Acceptance** is given in the EDL Message Interface Specification which can be made available to **Users** on request.

(b) **Bid-Offer Acceptances** will normally follow the form:

(i) **BM Unit** Name
(ii) Instruction Reference Number
(iii) Time of instruction
(iv) Type of instruction
(v) **BM Unit Bid-Offer Acceptance** number
(vi) Number of MW/Time points making up instruction (minimum 2, maximum 5)
(vii) MW value and Time value for each point identified in (vi)

The times required in the instruction are input and displayed in London time, but communicated electronically in GMT.

BC2.A.1.5 **BID-OFFER ACCEPTANCES** GIVEN BY TELEPHONE

(a) All run-up/run-down rates will be assumed to be constant and consistent with **Dynamic Parameters**. Each **Bid-Offer Acceptance** will, wherever possible, be kept simple, drawing as necessary from the following forms and BC2.7

(b) **Bid-Offer Acceptances** given by telephone will normally follow the form:

(i) an exchange of operator names;
(ii) **BM Unit** Name;
(iii) Time of instruction;
(iv) Type of instruction;
(v) Number of MW/Time points making up instruction (minimum 2, maximum 5)
(vi) MW value and Time value for each point identified in (v)

The times required in the instruction are expressed in London time.

For example, for a BM Unit ABCD-1 acceptance logged with a start time at 1400 hours and with a FPN at 300MW:

"BM Unit ABCD-1 Bid-Offer Acceptance timed at 1400 hours. Acceptance consists of 4 MW/Time points as follows:

300MW at 1400 hours
400MW at 1415 hours
400MW at 1450 hours
300MW at 1500 hours"

BC2.A.1.6 SUBMISSION OF **BID-OFFER ACCEPTANCE** DATA TO THE **BMRA**

The relevant information contained in **Bid-Offer Acceptances** issued by **NGC** will be converted into "from" and "to" MW levels and times before they are submitted to the **BMRA** by **NGC.**

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

BC2.A.2.1 This part of the Appendix consists of a non-exhaustive list of the forms and types of instruction for a **Genset** to provide **System Ancillary Services.** There may be other types of **Commercial Ancillary Services** and these will be covered in the relevant **Ancillary Services Agreement**. In respect of the provision of **Ancillary Services** by **Generating Units** the forms and types of instruction will be in the form of this Appendix 2 unless amended in the **Ancillary Services Agreement**.

As described in CC.8, **System Ancillary Services** consist of Part 1 and Part 2 **System Ancillary Services.**

Part 1 System Ancillary Services comprise:

(a) **Reactive Power** supplied other than by means of synchronous or static compensators. This is required to ensure that a satisfactory **System** voltage profile is maintained and that sufficient **Reactive Power** reserves are maintained under normal and fault conditions. **Ancillary Service** instructions in relation to **Reactive Power** may include:

(i) Mvar Output
(ii) Target Voltage Levels
(iii) Tap Changes
(iv) Maximum Mvar Output ('maximum excitation')
(v) Maximum Mvar Absorption ('minimum excitation')

(b) **Frequency** Control by means **of Frequency** sensitive generation. **Gensets** may be required to move to or from **Frequency Sensitive Mode** in the combinations agreed in the relevant **Ancillary Services Agreement**. They will be specifically requested to operate so as to provide **Primary Response** and/or **Secondary Response** and/or **High Frequency Response**.

Part 2 System Ancillary Services comprise:

(c) **Frequency** Control by means of **Fast Start.**

(d) **Black Start Capability**

BC2.A.2.2 As **Ancillary Service** instructions are not part of **Bid-Offer Acceptances** they do not need to be closed instructions and can cover any period of time, not just limited to the period of the **Balancing Mechanism**.

BC2.A.2.3 As described in BC2.6.1 **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.

BC2.A.2.4 INSTRUCTIONS GIVEN BY AUTOMATIC LOGGING DEVICE.

(a) The complete form of the **Ancillary Service** instruction is given in the EDL Message Interface Specification which is available to **Users** on request from **NGC**.

(b) **Ancillary Service** instructions for **Frequency** Control will normally follow the form:

(i) **BM Unit** Name

(ii) Instruction Reference Number
(iii) Time of instruction
(iv) Type of instruction (REAS)
(v) Reason Code
(vi) Start Time

(c) **Ancillary Service** instructions for **Reactive Power** will normally follow the form:

(i) **BM Unit** Name
(ii) Instruction Reference Number
(iii) Time of instruction
(iv) Type of instruction (MVAR, VOLT or TAPP)
(v) Target Value
(vi) Target Time

The times required in the instruction are input and displayed in London time, but communicated electronically in GMT.

BC2.A.2.5 INSTRUCTIONS GIVEN BY TELEPHONE

(a) **Ancillary Service** instructions for **Frequency** Control will normally follow the form:

(i) an exchange of operator names;
(ii) **BM Unit** Name;
(iii) Time of instruction;
(iv) Type of instruction;
(v) Start Time.

The times required in the instruction are expressed in London time.

For example, for **BM Unit** ABCD-1 instructed at 1400 hours to provide Primary and **High Frequency** response starting at 1415 hours:

"**BM Unit** ABCD-1 message timed at 1400 hours. Unit to **Primary and High Frequency Response** at 1415 hours"

(b) **Ancillary Service** instructions for **Reactive Power** will normally follow the form:

(i) an exchange of operator names;
(ii) **BM Unit** Name;
(iii) Time of instruction;
(iv) Type of instruction (MVAR, VOLT or TAPP)
(v) Target Value
(vi) Target Time.

The times required in the instruction are expressed as London time.

For example, for **BM Unit** ABCD-1 instructed at 1400 hours to provide 100Mvar by 1415 hours:

"**BM Unit** ABCD-1 message timed at 1400 hours. MVAR instruction. Unit to plus 100 Mvar target time 1415 hours."

BC2.A.2.6 **Reactive Power**

As described in BC2.A.2.4 and BC2.A.2.5 instructions for **Ancillary Services** relating to **Reactive Power** may consist of any of several specific types of instruction. The following table describes these instructions in more detail:

Instruction Name	Description	Type of Instruction
Mvar Output	The individual Mvar output from the **Genset** onto the **GB Transmission System** at the **Grid Entry Point** (or onto the **User System** at the **User System Entry Point** in the case of **Embedded Power Stations**), namely on the higher voltage side of the generator step-up transformer. In relation to each **Genset**, where there is no HV indication, **NGC** and the **Generator** will discuss and agree equivalent Mvar levels for the corresponding LV indication. Where a **Genset** is instructed to a specific Mvar output, the **Generator** must achieve that output within a tolerance of +/-25 Mvar (for **Gensets** in England and Wales) or the lesser of +/- 5% of rated output or 25Mvar (for **Gensets** in Scotland) (or such other figure as may be agreed with **NGC**) by tap changing on the generator step-up transformer, unless agreed otherwise. Once this has been achieved, the **Generator** will not tap again without prior consultation with and the agreement of **NGC**, on the basis that Mvar output will be allowed to vary with **System** conditions.	MVAR
Target Voltage Levels	Target voltage levels to be achieved by the **Genset** on the **GB Transmission System** at the **Grid Entry Point** (or on the **User System** at the **User System Entry Point** in the case of **Embedded Power Stations**, namely on the higher voltage side of the generator step-up transformer. Where a **Genset** is instructed to a specific target voltage, the **Generator** must achieve that target within a tolerance of ±1 kV (or such other figure as may be agreed with **NGC**) by tap changing on the generator step-up transformer, unless agreed otherwise with **NGC**. In relation to each **Genset**, where there is no HV indication, **NGC** and the **Generator** will discuss and agree equivalent voltage levels for the corresponding LV indication. Under normal operating conditions, once this target voltage level has been achieved the **Generator** will not tap again without prior consultation with, and with the agreement of, **NGC**. However, under certain circumstances the **Generator** may be instructed to maintain a target voltage until otherwise instructed and this will be achieved by tap changing on the generator step-up transformer without reference to **NGC**.	VOLT

Instruction Name	Description	Type of Instruction
Tap Changes	Details of the required generator step-up transformer tap changes in relation to a **Genset**. The instruction for tap changes may be a **Simultaneous Tap Change** instruction, whereby the tap change must be effected by the **Generator** in response to an instruction from **NGC** issued simultaneously to relevant **Power Stations**. The instruction, which is normally preceded by advance notice, must be effected as soon as possible, and in any event within one minute of receipt from **NGC** of the instruction. For a **Simultaneous Tap Change,** change **Genset** generator step-up transformer tap position by one [two] taps to raise or lower (as relevant) **System** voltage, to be executed at time of instruction.	TAPP
Maximum Mvar Output ("maximum excitation")	Under certain conditions, such as low **System** voltage, an instruction to maximum Mvar output at instructed MW output ("maximum excitation") may be given, and a **Generator** should take appropriate actions to maximise Mvar output unless constrained by plant operational limits or safety grounds (relating to personnel or plant).	
Maximum Mvar Absorption ("minimum excitation")	Under certain conditions, such as high **System** voltage, an instruction to maximum Mvar absorption at instructed MW output ("minimum excitation") may be given, and a **Generator** should take appropriate actions to maximise Mvar absorption unless constrained by plant operational limits or safety grounds (relating to personnel or plant).	

BC2.A.2.7 In addition, the following provisions will apply to **Reactive Power** instructions:

(a) In circumstances where **NGC** issues new instructions in relation to more than one **BM Unit** at the same **Power Station** at the same time tapping will be carried out by the **Generator** one tap at a time either alternately between (or in sequential order, if more than two), or at the same time on, each **BM Unit**.

(b) Where the instructions require more than two taps per **BM Unit** and that means that the instructions cannot be achieved within 2 minutes of the instruction time (or such longer period at **NGC** may have instructed), the instructions must each be achieved with the minimum of delay after the expiry of that period.

(c) It should be noted that should **System** conditions require, **NGC** may need to instruct maximum Mvar output to be achieved as soon as possible, but (subject to the provisions of paragraph (BC2.A.2.7(b) above) in any event no later than 2 minutes after the instruction is issued.

(d) An **Ancillary Service** instruction relating to **Reactive Power** may be given in respect of **CCGT Units** within a **CCGT Module** at a **Power Station** where running arrangements and/or **System** conditions require, in both cases where exceptional circumstances apply and connection arrangements permit.

(e) In relation to Mvar matters, Mvar generation/output is an export onto the **System** and is referred to as "lagging Mvar", and Mvar absorption is an import from the **System** and is referred to as "leading Mvar".

(f) It should be noted that the excitation control system constant **Reactive Power** output control mode or constant power factor output control mode will always be disabled, unless agreed otherwise with **NGC**.

Appendix 3 – Submission of Revised Mvar Capability

BC2.A.3.1 For the purpose of submitting revised Mvar data the following terms shall apply:

Full Output	The MW output of a **Generating Unit** (as defined in the Glossary and Definitions and not limited by BC2.2) measured at the generator stator terminals representing the LV equivalent of the **Registered Capacity** at the **Grid Entry Point**.
Minimum Output	The MW output of a **Generating Unit** (as defined in the Glossary and Definitions and not limited by BC2.2) measured at the generator stator terminals representing the LV equivalent of the **Minimum Generation** at the **Grid Entry Point**.

BC2.A.3.2 The following provisions apply to faxed submission of revised Mvar data:

(a) The fax must be transmitted to **NGC** (to the relevant location in accordance with GC6) and must contain all the sections from the relevant part of Annexures 1 and 2 but with only the data changes set out. The "notification time" must be completed to refer to the time of transmission, where the time is expressed as London time.

(b) Upon receipt of the fax, **NGC** will acknowledge receipt by sending a fax back to the **User**. The acknowledgement will either state that the fax has been received and is legible or will state that it (or part of it) is not legible and will request re-transmission of the whole (or part) of the fax.

(c) Upon receipt of the acknowledging fax the **User** will, if requested, re-transmit the whole or the relevant part of the fax.

(d) The provisions of paragraphs (b) and (c) then apply to that re-transmitted fax.

APPENDIX 3 - ANNEXURE 1

Optional Logo

Company name REVISED Mvar DATA

TO: NGC Transmission Control Centre Fax telephone No.

Number of pages inc. header:.....

Sent By : .....

Return Acknowledgement Fax to .....

For Retransmission or Clarification ring.....

Acknowledged by **NGC**: (Signature)

.....

Acknowledgement time and date .....

Legibility of FAX : Acceptable ☐

Unacceptable ☐ (Resend FAX)
(List pages if appropriate)

APPENDIX 3 - ANNEXURE 2

To: NGC Transmission Control Centre

From : [*Company Name & Location*]

REVISED Mvar DATA

NOTIFICATION TIME:	HRS MINS DD MM YY . / /

GENERATING UNIT*	

Start Time/Date (if not effective immediately)

REACTIVE POWER CAPABILITY AT GENERATOR STATOR TERMINAL (at rated terminal volts)

	MW	LEAD (Mvar)	LAG (Mvar)
AT **RATED MW**			
AT FULL OUTPUT (MW)			
AT MINIMUM OUTPUT (MW)			

GENERATING UNIT STEP-UP TRANSFORMER DATA

TAP CHANGE RANGE (+%,-%)	TAP NUMBER RANGE

OPTIONAL INFORMATION (for Ancillary Services use only) **-**
REACTIVE POWER CAPABILITY AT COMMERCIAL BOUNDARY (at rated stator terminal and nominal system volts)

	LEAD (Mvar)	LAG (Mvar)
AT **RATED MW**		

Predicted End Time/Date (to be confirmed by redeclaration)

Redeclaration made by (Signature) _____

Generating Unit has the meaning given in the Glossary and Definitions and is not limited by BC2.2.

* For a CCGT, the redeclaration is for an individual CCGT unit and not the entire module.

< End of BC2 >

performed by the **Relevant Transmission Licensees** in accordance with relevant obligations under the **STC**, for the avoidance of doubt all contractual rights and obligations arising under OC8B, OC7.6, OC9.4 and OC9.5 shall exist between **NGC** and the relevant **User** and in relation to any enforcement of those rights and obligations OC8B, OC7.6, OC9.4 and OC9.5 shall be so read and construed. The **Relevant Transmission Licensees** shall enjoy no enforceable rights under OC8B, OC7.6, OC9.4 and OC9.5 nor shall they be liable (other than pursuant to the **STC**) for failing to discharge any obligations under OC8B, OC7.6, OC9.4 and OC9.5.

GC.13.2 For the avoidance of doubt nothing in this **Grid Code** confers on any **Relevant Transmission Licensee** any rights, powers or benefits for the purpose of the Contracts (Rights of Third Parties) Act 1999.

GC.14 BETTA TRANSITION ISSUES

GC.14.1 The provisions of the Appendix to the **General Conditions** apply in relation to issues arising out of the transition associated with the designation of amendments to the **Grid Code** by the **Secretary of State** in accordance with the provisions of the Energy Act 2004 for the purposes of Condition C14 of **NGC's Transmission Licence**.

GC.15 *Embedded Exemptable Large and Medium Power Stations*

GC.15.1 This GC.15.1 shall have an effect until and including 31st March 2006.

(i) CC.6.3.2, CC.6.3.7, CC.8.1 and BC3.5.1; and

(ii) Planning Code obligations and other Connection Conditions;

shall apply to a **User** who owns or operates

(a) an **Embedded Exemtable Large Power Station**, or

(b) an **Embedded Exemptable Medium Power Station** in Scotland

except where and to the extent that, in respect of that **Embedded Exemptable Large Power Station** or **Embedded Exemptable Medium Power Station**, **NGC** agrees or where the relevant **User** and **NGC** fail to agree, where and to the extent that the **Authority** consents.

Annex to the **General Conditions**

The **Electrical Standards** are as follows:-

(a)	NGTS 1	Ratings and General Requirements for Plant, Equipment, Apparatus and Services for the National Grid System and Direct Connections to it	Issue 5 Dec-03
	NGTS 2.1	Substations	Issue 4 Dec-03
	NGTS 3.1.1	Substation Interlocking Schemes	Issue 3 Dec-03
	NGTS 2.2	Switchgear for the National Grid System	Issue 4 Dec-03
	NGTS 3.2.1	Circuit-breakers and Switches	Issue 3 Dec-03
	NGTS 3.2.2	Disconnectors and Earthing Switches	Issue 4 Dec-03
	NGTS 3.2.3	Metal-Oxide Surge Arresters for use on 132, 275 & 400 kV Systems	Issue 4 Dec-03
	NGTS 3.2.4	Current Transformers for Protection and General Use on the 132 kV, 275 kV and 400 kV Systems	Issue 5 Dec-03
	NGTS 3.2.5	Voltage Transformers for use on the 132 kV, 275 kV and 400 kV Systems	Issue 4 Dec-03
	NGTS 3.2.6	Current and Voltage Measurement Transformers for Settlement Metering of the 33 * 66 kV, 132 kV, 275 kV and 400 kV Systems	Issue 2 Dec-03
	NGTS 3.2.7	Bushings for the National Grid System	Issue 3 Dec-03
	NGTS 3.2.9	Post Insulators for Substations	Issue 3 Dec-03
	NGTS 3.3.2	Dry-Type Reactors	Issue 3 Dec-03
	NGTS 3.3.3	Co-ordinating Gaps	Issue 1 Sep-92
	NGTS 2.6	Protection	Issue 3 Nov-98
	NGTS 3.6.3	Busbar Protection for 400 kV and 275 kV Double Busbar Switching Stations	Issue 3 Dec-96
	NGTS 3.6.8	Circuit-Breaker Fail Protection	Issue 3 Mar-99
	NGTS 3.11.1	Capacitors and Capacitor Banks	Issue 3 Dec-03

CODE	PAGE	CLAUSE
GD	3	Definition of Bilateral Agreement amended
GD	4	Definition of BM Participant amended
GD	6	Definition of Construction Agreement amended
GD	7	Definition of Control Point amended
GD	12	Definition of Exemptable added
GD	17	Definition of Generating Unit Data added
GD	26	Definition of Physical Notifications amended
GD	41	Section 2.(vi) amended
GD – Pages 13 to 16, 18 to 42 page breaks changed.		
OC5	1	OC5.1 (y) amended
OC5	2	OC5.1 (1) and (2) amended
OC5 – Pages 1 to 5 page breaks changed.		
BC1	1	BC1.2 and BC1.4 amended
BC1	2	BC1.4.1(a), (d)(i) amended
BC1	3	BC1.4.2(a)(1) and (2) amended
BC1	4	BC1.4.2(c), (d), (e), (f) amended
BC1	5	BC1.4.3 amended
BC1	6	BC1.4.5 amended.
BC1	8	BC1.5.4(b) amended
BC1	9	BC1.5.5 amended
BC1	10	BC1.6.1(b)(i) amended
BC1	11	BC1.6.2 amended
BC1	12	First para Appendix 1 amended
BC1	16	CCGT Module Matrix example form amended
BC1	18	BC1.A.2.2 (ii) amended
BC1	19	BC1.A.2.3 Constraint Boundary (ii) amended.

BC1 – Pages 1 to 10, 18 page breaks changed.		
BC2	1	BC2.1(a), BC2.2 amended.
BC2	2	BC2.4.1(b) (b), BC2.5.1 amended.
BC2	3	BC2.5.1 (b) and other text amended, BC2.5.2.2, BC2.5.2.3 amended
BC2	4	BC2.5.2.4 amended
BC2	5	BC2.5.3.2, BC2.5.3.3 amended
BC2	6	BC2.5.5.1, BC2.5.5.2 amended
BC2	7	BC2.6.1(a)(b) amended
BC2	8	BC2.6.2, BC2.6.5(a) amended
BC2	11	BC2.8, BC2.8.1(b)(e) amended
BC2	12	BC2.8.4(a)(c)(d), BC2.9.1.2(c) amended
BC2	13	BC2.9.1.3, BC2.9.2.3, BC2.9.3.1, BC2.9.3.2(b) amended
BC2	15	BC2.9.4.4, BC2.9.4.5, BC2.9.4.6, BC2.9.5, BC2.9.5.1 amended
BC2	16	BC2.9.7.2(b) amended
BC2	17	BC2.9.7.2(b) amended
BC2	22	BC2.A.2.1 amended
BC2	27	BC2.A.3.1 amended
BC2	29	Annexure 2 amended
BC2 – Pages 1 to 29 page breaks changed.		