



National Grid

GRID CODE CONSULTATION DOCUMENT

OC1 OC2 'Phase 2 – Short Term' Proposals

The purpose of this document is to consult on the above Grid Code Modification Proposal with authorised electricity operators liable to be materially affected by the proposed changes

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Issue	1.0
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Prepared by	National Grid

1 DOCUMENT LOCATION

National Grid website:

http://www.nationalgridinfo.co.uk/grid_code/mn_consultation_papers.html

2 DISTRIBUTION

Name	Organisation
AEO's	Various
GCRP Members/Alternates	Various
Interested Parties	Various
National Grid Industry Information Website	

A. INTRODUCTION

1. National Grid Company plc ("National Grid"), in accordance with its obligations under paragraph 2 of Condition C14 of the Transmission Licence, believes that the time has come to review, in consultation with authorised electricity operators liable to be materially affected thereby, the Grid Code and its implementation in certain respects.
2. This Consultation is concerned with the information received and disseminated by National Grid which has been the subject of OC1/OC2 Working Group. The Working Group has discussed a number of proposals for improving the current information flows. The proposed changes to the Grid Code were discussed at the Grid Code Review Panel meeting on 19 May 2005. The Panel members agreed that having taken account of comments received at the Panel meeting, National Grid should issue a Consultation Paper.
3. Following receipt of comments from those authorised electricity operators which it has consulted by this Paper, National Grid intends, in accordance with paragraph 2 of Condition C14 of the Transmission Licence, to send to the Authority :-
 - (a) a report on the outcome of its review, including this consultation process;
 - (b) the proposed revisions to the Grid Code which National Grid (having regard to the outcome of such review) reasonably thinks fit for the achievement of the objectives of the Grid Code referred to in sub-paragraph (b) of paragraph 1 of Condition C14 of the Transmission Licence; and
 - (c) any written representations or objections from authorised electricity operators (including any proposals by such operators for revisions to the Grid Code not accepted by National Grid in the course of the review) arising during the consultation process and subsequently maintained.
4. The report will also be made publicly available on National Grid's website.
5. The revisions to the Grid Code proposed by National Grid and sent to the Authority then require approval by that body and will, if approved, come into force on such date (or dates) of which you will be notified by National Grid, in accordance with the Authority's approval.
6. The individual proposals seeking approval of the Authority are independent of each other in that, should the Authority approve only some of the proposals, the approved proposals could be implemented independently of those that have not been approved.

B. DESCRIPTION OF THE PROPOSED AMENDMENTS AND THEIR EFFECTS

7 Background

- 7.1 In May 2004, National Grid initiated the Consultation process for 'phase 1' proposals on improving the information flows between Users and National Grid. These proposals were outlined in the Consultation paper G/04¹ and were implemented on 11 October 2004. NGC believes that these proposals have

¹ Consultation Paper G/04 Proposed changes to Operating Codes OC1 and OC2 (date of issue: 23 July 2004)

successfully delivered the desired improvements by providing additional clarity and consistency in the information flows.

- 7.2 G/04 also summarised 'phase 2' proposals which required further development before they could be considered for implementation.
- 7.3 A Working Group was set up at the September 2004 GCRP to develop 'phase 2' proposals.
- 7.4 The OC/OC2 Working Group has debated a range of proposals which include the 'phase 2' proposals in G/04 and a possible re-write of OC1 and OC2.
- 7.5 NGC believes that, given the ongoing changes to the Grid Code and the interaction with 'phase 2' proposals, a complete revision of OC1 and OC2 was not appropriate at this stage. The re-write will therefore be considered at a later date, possibly after the outcome of 'phase 2' proposals is known.
- 7.6 The 'phase 2' proposals were discussed at the OC1/OC2 Working Group meetings and at the Grid Code Review Panel meeting on 19 May 2005. For information, the NGC's paper presented to the May GCRP can be accessed via the link
http://www.nationalgridinfo.co.uk/grid_code/pdfs/PP05_07OC1_OC2.pdf
- 7.7 After discussions at the Working Group and the May GCRP, the 'phase 2' proposals have been divided into two categories; 'phase 2 – short term' proposals, which do not require major system changes and have no consequential impact on the BMRS and the BSC, could, in NGC's view, be implemented for the coming winter '05/06'. In contrast, 'phase 2 – long term' proposals are likely to require significant system changes, including changes to the BMRS; these proposals are likely to involve significant costs and implementation lead times, and hence are unlikely to be considered for implementation for the 05/06 winter.
- 7.8 This Consultation paper focuses on 'phase 2 – short term' proposals, which are briefly described in section 8 and their impact on the Grid Code is outlined in section 9. Representations are only sought on these proposals (i.e. 'phase 2 – short term' proposals).
- 7.9 For completeness, 'phase 2 – long term' proposals are summarised in Appendix 1. These proposals will be further discussed with the industry and will be brought forward at a later date. These proposals are also being discussed by a BSC Issue Group.

8. Description of Individual Proposals

The Consultation paper focuses on the following proposals:

- Revised definition of Output Usable
- Removal of Suppliers' Customer Demand Management obligations
- Provision of Generator outage data at Generating Unit level
- Removal of NGC's obligations to provide its Year 1 outage plan to unaffected Generators

8.1 Revised definition of Output Usable (OU)

Proposal: Revise OU definition as: “the (daily or weekly) forecast value, at the time of the (daily or weekly) peak demand, of the maximum level at which the Genset can export (in MW) to the Connection Site”.

The longer-term (>2 days ahead) and shorter-term (<2 days ahead) forecasts of available generation and margins are based on different assumptions, driven by different definitions in the Grid Code. The longer-term forecasts are derived from the Output Usable which is currently based on the Registered Capacity of a Genset, whilst the shorter-term forecasts are based on the Maximum Export Level (MEL) of BM Units. The resulting discontinuity in the forecasts at 2 days ahead does not provide for the most efficient market signals to emerge.

The discontinuity can be resolved by ensuring that the two sets of forecasts are based on the same assumptions and this could be achieved by using MEL as the basis for an OU definition. However, the revised definition also needs to take into account the output from the power stations that are not necessarily BMUs i.e. the Embedded Exemptable Large Power Stations (EELPS). Therefore, the revised definition of OU is broadly based on the ‘wording’ of MEL rather the exact definition of MEL.

It has been suggested that, for consistency with other relevant Grid Code terms such as MEL and Physical Notifications (PNs), the term ‘Connection Site’ should be replaced with ‘Grid Entry Point’ in the OU definition. The use of the term ‘Grid Entry Point’ also implicitly takes into account any losses on the distribution networks.

Industry views are invited on whether the OU should correspond to MW deliverable at a Connection Site or a Grid Entry Point.

With respect to the interaction between OU, TEC (Transmission Entry Capacity) and environmental limits (e.g. emissions), the Working Group discussed the merits of capping OU submissions by TEC although no clear way forward was agreed on this. In NGC’s view, both the unrestricted and capped OU have advantages and disadvantages. For example, the unrestricted OU gives a view of the total generation that is likely to be available which could be particularly useful in emergency situations; however, the unrestricted OU is likely to include generation which is not necessarily available (e.g. due to TEC restrictions) and hence could be misleading. In contrast, the capped OU is likely to give a more realistic view of the generation availability although this is likely to exclude generation which could be made available in emergency circumstances. Capping of OU is also likely to result in a loss of information on generation availability that is excluded from the OU. NGC believes that there should be no loss of information and hence OU should reflect the maximum forecast availability of generation without any capping. In the meantime, NGC would consider the provision of additional information which, in NGC’s view, might help better interpretation of the unrestricted OU. Furthermore, NGC considers that, in the longer term, both the unrestricted and the capped OU data should be available so that the Users can form their own view of the generation availability; this could be considered as part of the longer term proposal ‘publication of disaggregated of OU’ which is summarised in Appendix 1.

Industry views are invited on the interaction between OU and TEC, and whether the OU should be capped by TEC.

8.2 Removal of Suppliers' Customer Demand Management (CDM) obligations

Proposal: Remove Suppliers' CDM obligations

The current OC1 provisions specify Suppliers' obligation to notify NGC of any Customer Demand Management i.e. the demand reduction that is specifically agreed between a Supplier and a Customer. During earlier Working Group discussions, NGC outlined how, in the past, the CDM information contributed to more accurate demand forecasts and hence better market signals. During these discussions, it also transpired that the Suppliers might not be in a position to provide the required information (e.g. Customers may carry out demand reduction without informing the Suppliers).

In NGC's view, the volume of notified CDM as a proportion of total (notified and un-notified) demand reduction is small and hence has no significant impact on NGC's demand forecasts. Furthermore, NGC's demand forecast models predict demand management at system peak demand and these show good correlation between its forecasts and actual demand reductions. NGC therefore believes that the removal of CDM requirements is unlikely to have any significant impact on its demand forecasts.

NGC has taken the industry views into consideration and, given the insignificant impact of CDM on demand forecasts, has concluded that the removal of the CDM obligations is in the best interests of the industry as a whole. This proposal therefore proposes to remove the definition of CDM and associated obligations on Suppliers from the Grid Code.

NGC recognises that there may be concerns regarding the removal of these obligations. NGC therefore requests industry views on the removal of CDM obligations and any concerns regarding a potential reduction in information on demand management.

8.3 Provision of Generator outage data at Generating Unit level

Proposal: Generators to provide outage data at a Generating Unit level

The Grid Code currently requires outage data at a Genset level. Consequently, NGC receives the Generator outage data at both Generating Unit and BM Unit levels. The majority of the data received by NGC already corresponds to the Generating Units, however this proposal would result in around 23% of BM Units (based on England & Wales generation only) having to provide further information when compared to current practice. NGC proposes that, for the reasons outlined below, all outage data should be provided at the Generating Unit level.

Fault level analysis

- NGC analyses fault levels in order to ensure optimal system configuration. If all the Generating Units within a CCGT Module had the same fault profiles, the outage information at a BM Unit level would be less critical although indication that a unit was to be desynchronised

would be required. However, the Generating Units within a CCGT do not necessarily have an equal effect on the site fault levels and NGC therefore requires outage information on individual Generating Units within a CCGT.

Voltage stability analysis

- Voltage stability analysis forms a key input into NGC's assessment of system security and system requirements for reactive power. The voltage stability depends on the reactive capability of Generating Units which do not necessarily have the same characteristics within a CCGT module. In fact, only 6% of the CCGT modules have equal reactive capacity across the Generating Units. Therefore, the outage data is required at the Generating Unit level for accurate assessment of reactive power requirements.

System stability analysis

- System stability analysis forms a key input to NGC's assessment of system security and system requirements for reduction in generation. The outage data is required at the Generating Unit level for accurate assessment of these requirements due to the differing stability characteristics of some units.

Other reasons

- The number of modular type generators is increasing and this trend will increase the need for outage data requirements at the Generating Unit level.
- As generators age, the characteristics of Generating Units tend to diverge due to different fault rates, maintenance cycle etc.
- Where the outage data is not provided at the Generating Unit level, NGC has to use its engineering judgement to determine the expected unit profiles which can lead to inefficient operation or increased security risk.

8.4 Removal of NGC's obligations to provide its Year 1 outage plan to unaffected Generators

Proposal: Remove NGC's obligations to provide its Year 1 Final Outage Plan and subsequent updates to unaffected Generators

NGC currently provides Generators with its Final Outage Plan for Year 1, as well as any revisions to the Outage Plan. This information is provided to the Generators regardless of whether they are affected by the outages or not. NGC believes that the Outage Plan should only be made available to those parties that are affected by it.

This proposal proposes to remove the prevailing provisions associated with the provision of Final Outage Plan for Year 1 to Generators.

9. Impact of Proposed Changes on the Grid Code

The proposals outlined in section 8 affect a number of areas of the Grid Code, as summarised below. The Grid Code version used as the baseline for the proposed changes incorporates the outcome of Consultation H/04² that became effective from 1 June 2005 and the outcome of Consultation A/05³ which will become effective from 15 July 2005.

9.1 Glossary and Definitions

The proposed changes to this part of the Grid Code are as follows:

- A revision to the definition of Output Usable
- Removal of the definition of Customer Demand Management or CDM
- Removal of the definition of Customer Demand Management Notification Level

The proposed changes are indicated in the change marked version of Glossary and Definition in Appendix 2.

9.2 Operating Code OC1

The proposed changes to this part of the Grid Code are as follows:

- Removal of references to Customer Demand Management and Customer Demand Management Notification Level
- Renumbering of paragraphs to incorporate the above changes

The proposed changes are indicated in the change marked version of OC1 in Appendix 3.

9.3 Balancing Code BC1

The proposed changes to this part of the Grid Code are as follows:

- Removal of references to Customer Demand Management
- Renumbering of paragraphs to incorporate the above change

The proposed changes are indicated in the change marked version of BC1 in Appendix 4.

9.4 Operating Code OC2

The proposed changes to this part of the Grid Code are as follows:

- Replacement of references to Gensets with Generating Units for provisions related to outages (throughout OC2)
- Removal of provisions related to the provision of NGC's Year 1 final outage plan (OC2.4.1.3.3(h)(iii)) and subsequent updates (OC2.4.1.3.4 (e))
- Renumbering of paragraphs to incorporate above changes

² Consultation H/04 Proposed Grid Code Changes to Incorporate New Generation Technologies and DC Inter-connectors (Generic Provisions)

³ Consultation A/05 ("Grid Code changes consequential to CUSC Amendment Proposal CAP076 – Treatment of System to Generator Intertripping Schemes")

The proposed changes are indicated in the change marked version of OC2 in Appendix 5.

C. COMMENTS

10. National Grid would be grateful to receive your comments on, or any suggestions you may have in relation to, these proposed amendments to the Grid Code. Comments would be welcomed and should be sent to National Grid by **15 July 2005**. The comments will be reviewed and responded to and National Grid will then prepare its report to the Authority.
11. Unless otherwise marked as confidential any responses containing objections to the proposals which are maintained will be published on our website in the copy of the Report to the Authority referred to in paragraphs 3 and 4.
12. Your formal responses may be:-

Posted to: David Payne
Industry Codes
Commercial Frameworks
National Grid Company plc
National Grid Transco House
Warwick Technology Park
Gallows Hill
Warwick
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Emailed to: david.payne@ngtuk.com

APPENDIX 1

'Phase 2 – long term' Proposals

This appendix contains longer term proposals that NGC believes there is merit in progressing at a later date. These proposals have not yet been discussed in any great detail at the Oc1 and OC2 Working Group and are currently being considered by a BSC Standing Issue Group. Specific changes to the Grid Code will need to be considered by the OC1 Oc2 Working Group at a later date.

Title	Description
Rationalisation of geographic zonal boundaries	<p>At present, the OC2 System Zonal boundaries are used for data corresponding to longer timescales (> 2 days ahead) and BMRS Zones for data corresponding to shorter timescales (< 2 days ahead). It is proposed that the BMRS Zones should be used across all timescales. Consequently, the OC2 System Zonal boundaries would be redundant and would be removed from the Grid Code.</p> <p>A key implication of this proposal is that the OC2 zonal OU-based data currently received by Users via OC2 will no longer be made available by NGC. NGC believes that all zonal data should only be available via the BMRS to ensure that the whole market has access to the same data at the same time. This will avoid the current position where some Generators have privileged access (time wise) to market data ahead of other participants.</p> <p>The BMRS Zones are defined in the BSC as <i>"the zones set from time to time by the Panel in consultation with the Transmission Company...."</i>. Any future modifications to the BMRS Zones can therefore be made via the BSC process.</p>
Publication of disaggregated OU data	<p>At present, the OU data is published as a single daily or weekly figure which does not distinguish between various sources of generation, particularly the less predictable ones such as intermittents. This proposal intends to publish OU as a stack of its constituent parts i.e. 'predictable' OU, 'unpredictable' OU (e.g. output from intermittents) and imports from interconnectors. OU could be further categorised by considering the extent to which OU is inaccessible (e.g. due to TEC limits or system constraints); this could be achieved by publishing total OU (unrestricted) as well as the OU which is actually accessible. OU could be published on BMRS rather than the Elexon website where the OU is currently published.</p>
Rationalisation of OC2 timescales	<p>This proposal removes the current duplications in OU submissions and removes requirements for less reliable longer-term OU submissions. It requires simultaneous implementation of the proposal "Rationalisation of OC1 timescales" and consists of the following 4 elements:</p> <ul style="list-style-type: none"> ✓ Combine the current 2-14 day daily submission (daily resolution) and the current 2-49 day weekly submission (daily resolution) into a single 2-49 day daily submission

Title	Description
	<p>(daily resolution).</p> <ul style="list-style-type: none"> ✓ Remove the current 2-7 week requirement (weekly resolution) so that the weekly submission corresponds to 8-52 weeks (weekly resolution). ✓ Retain current requirements for years 1, 2 and 3; ✓ Remove current requirements for years 4 and 5.
Rationalisation of OC1 timescales	<p>This proposal removes the current duplications in demand forecasts and, for consistency with the proposal “Rationalisation of OC2 timescales”, removes requirements for longer-term demand forecasts. It requires simultaneous implementation of the proposal “Rationalisation of OC1 timescales” and consists of the following 4 elements:</p> <ul style="list-style-type: none"> ✓ Extend the current 2-14 day daily 'normal' peak demand forecast to 2-49 days ahead of real time; ✓ Remove the current 2-7 week weekly 'normal' peak demand forecast so that the future forecasts correspond to 8-52 weeks ahead of real time; ✓ Retain current requirements for years 1, 2 and 3; ✓ Remove current requirements for years 4 and 5.
Provision of additional demand information for <u>shorter</u> timescales	<p>At present, the published short term (0 – 48 hours) demand forecast can not be reconciled with the outturned demand because the published forecast includes pump storage and interconnector exports whereas the published outturned demand does not include these figures. It is proposed that additional demand forecast data <u>without</u> pump storage and interconnector exports, and additional outturned figure <u>with</u> pump storage and interconnector is published.</p>
Provision of additional demand information for <u>longer</u> timescales	<p>NGC currently publishes the daily 'normal' peak demand forecast for 2 – 14 days ahead of real time and the weekly 'normal' peak demand forecast for 2 – 52 weeks ahead of real time. The published forecasts do not show any confidence bands around the 'normal' demand figure.</p> <p>Under this proposal, NGC will publish the confidence levels for the demand forecasts and associated temperatures for longer timescales (beyond 2 days ahead of real time). If the proposal to rationalise the OC1 timescales (proposal 8) is implemented, the confidence levels could be published for the revised timescales (2 – 49 days, 8 – 52 weeks and 1 – 3 years ahead of real time).</p>

APPENDIX 2

Glossary and Definitions

Proposed definition of Output Usable or OU

~~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**. The (daily or weekly) forecast value, at the time of the (daily or weekly) peak demand, of the maximum level at which the **Genset** can export (in MW) to the **Connection Site**.~~

Proposed removal of the definition of Customer Demand Management or CDM and the Proposed removal of the definition of Customer Demand Management Notification Level

~~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.~~

APPENDIX 3

PROPOSED CHANGES TO OC1 (DEMAND FORECASTS) and

Change OC1.5.4 as follows:

OC1.5.4 Other Codes

Under **OC6** each **Network Operator** will notify **NGC** of their proposed use of **Demand Control** (which may result in a **Demand** change equal to or greater than the **Demand Control Notification Level**), ~~and under **BC1**, each **Supplier** will notify **NGC** of their proposed use of **Customer Demand Management** (which may result in a **Demand** change equal to or greater than the **Customer Demand Management Notification Level**) in this timescale.~~

Delete OC1.5.5.2 (a) and (b):

- ~~(a) — Each **Supplier** will notify **NGC** of any **Customer Demand Management** proposed by itself which may result in a **Demand** change equal to or greater than the **Customer Demand Management Notification Level** averaged over any half hour on any **Grid Supply Point** which is planned to occur at any time in the **Control Phase** and of any changes to the planned **Customer Demand Management** already notified to **NGC** as soon as possible after the formulation of the new plans.~~
- ~~(b) — The following information is required on a Grid Supply Point and half-hourly basis:-~~
- ~~(i) — the proposed date, time and duration of implementation of **Customer Demand Management**; and~~
 - ~~(ii) — the proposed reduction in Demand by use of **Customer Demand Management**.~~

Delete OC1.5.6 (b):

- ~~(b) — **Customer Demand Management**: Each **Supplier** will supply MW profiles of the amount and duration of **Demand** reduction achieved by itself from the use of **Customer Demand Management** equal to or greater than the **Customer Demand Management Notification Level** (averaged over any half hour on any **Grid Supply Point**) on a half hourly and **Grid Supply Point** basis during the previous calendar day.~~

Delete OC1.6.1 (f):

- ~~(f) — **Customer Demand Management** equal to or greater than the **Customer Demand Management Notification Level** (averaged over any half hour at any **Grid Supply point**) proposed to be exercised by **Suppliers** and of which **NGC** has been informed.~~

Renumber items (g)-(k) in OC1.6 as follows:

- ~~(g)~~(f) Other information supplied by **Users**.
- ~~(h)~~(g) Anticipated **Pumped Storage Unit** demand.
- ~~(i)~~(h) the sensitivity of **Demand** to anticipated market prices for electricity.
- ~~(j)~~(i) **BM Unit Data** submitted by **BM Participants** to **NGC** in accordance with the provisions of **BC1** and **BC2**.

~~(k)(j)~~ **Demand taken by Station Transformers**

Change OC1.6.3 as follows:

OC1.6.3 The methodology will be based upon factors (a), (b) and (c) above to produce, by statistical means, unbiased forecasts of **GB National Demand**. **GB Transmission System Demand** will be calculated from these forecasts but will also take into account factors (d), (e), (f), (g), (h) and (i) ~~and (j)~~ above. No other factors are taken into account by **NGC**, and it will base its **GB Transmission System Demand** forecasts on those factors only.

APPENDIX 4**PROPOSED CONSEQUENTIAL CHANGES TO BC1 (PRE GATE CLOSURE PROCESS)**

Delete BC1.4.2 (f) (iv):

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

Renumber items (v) and (vi) in BC1.4.2 (f) as follows:

- ~~(v)~~(iv) 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)~~(v) in the case of a **Cascade Hydro Scheme**, the **Cascade Hydro Scheme Matrix** as described in **BC1** Appendix 1.
- ~~(vii)~~(vi) in the case of a **Power Park Module**, a **Power Park Module Availability Matrix** as described in **BC1** Appendix 1.

APPENDIX 5

PROPOSED CHANGES TO OC2

OPERATIONAL PLANNING AND DATA PROVISION

Amend OC2 provisions as follows:

OC2.1 INTRODUCTION

OC2.1.1 **Operating Code No. 2 ("OC2")** is concerned with:

- (a) the co-ordination of the release of **GensetsGenerating Units**, the **GB Transmission System** and **Network Operators' Systems** for construction, repair and maintenance;
- (b) provision by **NGC** of the **Surpluses** both for the **GB Transmission System** and **System Zones**;
- (c) the provision by **Generators** of **Generation Planning Parameters** for **Gensets**, including **CCGT Module Planning Matrices** and **Power Park Module Planning Matrices**, to **NGC** for planning purposes only; and
- (d) the agreement for release of **Existing Gas Cooled Reactor Plant** for outages in certain circumstances.

OC2.1.2 (a) **Operational Planning** involves 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**, **Power Park Modules** and **DC Converters**, and of parts of the **GB Transmission System** and of parts of **Network Operators' Systems** which is 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.

- (b) In general terms there is an "envelope of opportunity" for the release of **GensetsGenerating Units** and for the release of parts of the **GB Transmission System** and parts of the **Network Operator's User Systems** for outages. The envelope is defined by the difference between the total generation output expected from **Large Power Stations**, **Medium Power Stations** and **Demand**, the operational planning margin and taking into account **External Interconnections**.

OC2.1.3 In this **OC2** for the purpose of **Generator** outage co-ordination Year 0 means the current calendar year at any time, Year 1 means the next calendar year at any time, Year 2 means the calendar year after Year 1, etc. For the purpose of **Transmission** outage planning Year 0 means the current **Financial Year** at any time, Year 1 means the next **Financial Year** at any time, Year 2 means the **Financial Year** after Year 1, etc. References to 'weeks' in **OC2** are to calendar weeks as defined in ISO 8601.

- OC2.1.4 References in **OC2** to a **Generator's** "best estimate" shall be that **Generator's** best estimate acting as a reasonable and prudent **Generator** in all the circumstances.
- OC2.1.5 References to **NGC** planning the **GB Transmission System** outage programme on the basis of the **Final Generation Outage Programme**, are to **NGC** planning against the **Final Generation Outage Programme** current at the time it so plans.
- OC2.1.6 Where in **OC2** data is required to be submitted or information is to be given on a particular day, that data does not need to be submitted and that information does not need to be given on that day if it is not a **Business Day** or it falls within a holiday period (the occurrence and length of which shall be determined by **NGC**, in its reasonable discretion, and notified to **Users**). Instead, that data shall be submitted and/or that information shall be given on such other **Business Day** as **NGC** shall, in its reasonable discretion, determine. However, **NGC** may determine that that data and/or information need not be submitted or given at all, in which case it shall notify each **User** as appropriate.
- OC2.1.7 Where in this **OC2** a **Generator** is required to submit an **Output Usable** forecast of its **Large Power Stations** or of each of its **Gensets**, in the case of **Embedded Large Power Stations** and **Embedded Gensets**, the **Output Usable** forecast must be adjusted by the **User** prior to submission to represent MW at the relevant **Grid Supply Point**.
- OC2.1.8 In Scotland, it may be possible with the agreement of **NGC** to reduce the administrative burden for **Users** in producing planning information where either the output or demand is small.
- OC2.2 OBJECTIVE
- OC2.2.1 (a) The objective of **OC2** is to seek to enable **NGC** to harmonise outages of **Gensets** Generating Units in order that such outages are co-ordinated (taking account of **Medium Power Stations**) between **Generators** and **Network Operators**, and that such outages are co-ordinated taking into account **GB Transmission System** outages and other **System** outages, so far as possible to minimise the number and effect of constraints on the **GB Transmission System** or any other **System**.
- (b) In the case of **Network Operator' User Systems** directly connected to the **GB Transmission System** this means in particular that there will also need to be harmonisation of outages of **Embedded Gensets** Generating Units, and **GB Transmission System** outages, with **Network Operators** in respect of their outages on those **Systems**.
- OC2.2.2 The objective of **OC2** is also to enable the provision by **NGC** of the **Surpluses** both for the **GB Transmission System** and **System Zones**.
- OC2.2.3 A further objective of **OC2** is to provide for the agreement for outages for **Existing Gas Cooled Reactor Plant** in certain circumstances and to enable a process to be followed in order to provide for that.
- OC2.2.4 The boundaries of the **System Zones** will be determined by **NGC** from time to time taking into account the disposition of **Generators' Power Stations** within

the **System Zones**. The location of the boundaries will be made available to all **Users**. Any **User** may request that **NGC** reviews any of the **System Zonal** boundaries if that **User** considers that the current boundaries are not appropriate, giving the reasons for their concerns. On receipt of such a request **NGC** will review the boundaries if, in **NGC's** reasonable opinion, such a review is justified.

OC2.3 SCOPE

OC2.3.1 **OC2** applies to **NGC** and to **Users** which in **OC2** means:-

- (a) **Generators**, other than those which only have **Embedded Small Power Stations** or **Embedded Medium Power Stations**, (and the term **Generator** in this **OC2** shall be construed accordingly);
- (b) **Network Operators**; and
- (c) **Non-Embedded Customers**; and
- (d) **DC Converter Station** owners.

OC2.4 PROCEDURE

OC2.4.1 Co-ordination of Outages

OC2.4.1.1 Under **OC2** the interaction between **NGC** and **Users** will be as follows:

Each **Generator** and **NGC**

In respect of outages of **Gensets** **Generating Units** and in respect of outages of other **Plant** and/or **Apparatus** directly connected to the **GB Transmission System**;

NGC and each **Generator**

in respect of **GB Transmission System** outages relevant to each **Generator** (other than in respect of **Embedded Small Power Stations** or **Embedded Medium Power Stations**);

NGC and each **Network Operator**

in respect of outages of all **Embedded Large Power Stations** and in respect of outages of other **Plant** and/or **Apparatus** relating to such **Embedded Large Power Stations**;

NGC and each **Network Operator** and each **Non-Embedded Customer**

in respect of **GB Transmission System** outages relevant to the particular **Network Operator** or **Non-Embedded Customers**;

Each **Network Operator** and each **Non-Embedded Customer** and **NGC**

in respect of **User System** outages relevant to **NGC**.

OC2.4.1.2 PLANNING OF **GENSETGENERATING UNITS** OUTAGES

OC2.4.1.2.1 Operational Planning Phase - Planning for Calendar Years 3 to 5 inclusive – Weekly Resolution

In each calendar year:

- (a) By the end of week 2

Each **Generator** will provide **NGC** in writing with:

- (i) a provisional **GensetGenerating Unit** outage programme (covering all non-**Embedded Power Stations** and **Embedded Large Power Stations**) for Year 3 to Year 5 (inclusive) specifying the **GensetGenerating Unit** and MW concerned, duration of proposed outages, the preferred date for each outage and where there is a possibility of flexibility, the earliest start date and latest finishing date; and
 - (ii) a best estimate weekly **Output Usable** forecast of all its **Gensets** for Year 3 to Year 5.
- (b) Between the end of week 2 and the end of week 12

NGC will be:

- (i) calculating total winter peak generating capacity assumed to be available to the **Total System** (taking into account the import capacity which may be available from **External Interconnections**);
- (ii) calculating the total winter peak generating capacity expected from **Large Power Stations**, taking into account **Demand** forecasts and details of proposed use of **Demand Control** received under **OC1**, and an operational planning margin set by **NGC** (the "**Operational Planning Margin**");
- (iii) calculating the weekly peak generating capacity expected from **Large Power Stations** taking into account demand forecasts and details of proposed use of **Demand Control** received under **OC1**, and the **Operational Planning Margin** and **Zonal System Security**

Requirements. The total weekly peak MW needed to be available is the "weekly total MW required".

The calculation under (iii) will effectively define the envelope of opportunity for outages of **GensetsGenerating Units**.

During this period, **NGC** may, as appropriate, contact each **Generator** who has supplied information to seek clarification on points.

(c) By the end of week 12

NGC will:

(i) having taken into account the information notified to it by **Generators** and taking into account:-

- (1) **GB Transmission System** constraints and outages,
- (2) **Network Operator System** constraints and outages, known to **NGC**, and
- (3) the **Output Usable** required, in its view, to meet weekly total MW requirements,

provide each **Generator** in writing with any suggested amendments to the provisional outage programme supplied by the **Generator** which **NGC** believes necessary, and will advise **Generators** with **Large Power Stations** of the **Surpluses** both for the **GB Transmission System** and **System Zones** and potential export limitations, on a weekly basis, which would occur without such amendments;

(ii) provide each **Network Operator** in writing with potential outages of **GensetsGenerating Units** which may, in the reasonable opinion of **NGC** and the **Network Operator**, affect the integrity of that **Network Operator's User System** provided that, in such circumstances **NGC** has notified the **Generator** concerned at least 48 hours beforehand of its intention to do so (including identifying the **GensetGenerating Unit** concerned).

(d) By the end of week 14

(i) Where a **Generator** or a **Network Operator** is unhappy with the suggested amendments to its provisional outage programme (in the case of a **Generator**) or such potential outages (in the case of a **Network Operator**) it may contact **NGC** to explain its concerns and **NGC** and that **Generator** or **Network Operator** will then discuss the problem and seek to resolve it.

(ii) The possible resolution of the problem may require **NGC** or a **User** to contact other **Generators** and **Network Operators**, and joint meetings of all parties may, if any **User** feels it would be helpful, be convened by **NGC**. The need for further discussions, be they on the telephone or at meetings, can only be determined at the time.

(e) By the end of week 25

Each **Generator** will provide **NGC** in writing with an updated provisional **GensetGenerating Unit** outage programme covering both **Embedded** and non-**Embedded Large Power Stations** together with the best estimate weekly **Output Usable** forecasts for each **Genset**, in all cases for Year 3 to Year 5 (inclusive). The updated provisional **GensetGenerating Unit** outage programme will contain the MW concerned, duration of proposed outages, the preferred date for each outage and, where applicable, earliest start date and latest finishing date, together with an update of the **Output Usable** estimate supplied under (a)(ii) above.

(f) Between the end of week 25 and the end of week 28

NGC will be considering the updated provisional **GensetGenerating Unit** outage programme, together with the best estimate weekly **Output Usable** forecasts supplied to it by **Generators** under (e) and their **Registered Capacity** and will be analysing **Operational Planning Margins** for the period.

(g) By the end of week 28

NGC will:

- (i) provide each **Generator** in writing with details of any suggested revisions considered by **NGC** as being necessary to the updated provisional **GensetGenerating Unit** outage programme supplied to **NGC** under (e) and will advise **Generators** with **Large Power Stations** of the **Surpluses** for the **GB Transmission System** and **System Zones** and potential export limitations on a weekly basis which would occur without such revisions; and
- (ii) provide each **Network Operator** in writing with the update of potential outages of **GensetsGenerating Unit** which, in the reasonable opinion of **NGC** and the **Network Operator**, affect the integrity of that **Network Operator's User System**.

(h) By the end of week 31

Where a **Generator** or a **Network Operator** is unhappy with the revisions suggested to the updated provisional **GensetGenerating Unit** outage programme (in the case of a **Generator**) or such update of potential outages (in the case of a **Network Operator**) under (g) it may contact **NGC** to explain its concerns and the provisions set out in (d) above will apply to that process.

(i) By the end of week 42

NGC will:

- (1) provide each **Generator** in writing with details of suggested revisions considered by **NGC** as being necessary to the updated provisional **GensetGenerating Unit** outage programme supplied to **NGC** and will

advise **Generators** with **Large Power Stations** of the **Surpluses** for the **GB Transmission System** and **System Zones** and potential export limitations, on a weekly basis which would occur without such revisions;

- (2) provide each **Network Operator** in writing with the update of potential outages of **GensetsGenerating Units** which may, in the reasonable opinion of **NGC** and the **Network Operator**, affect the integrity of that **Network Operator's User System** provided that, in such circumstances **NGC** has notified the **Generator** concerned at least 48 hours beforehand of its intention to do so (including identifying the **GensetsGenerating Units** concerned).
- (j) By the end of week 45

NGC will seek to agree a **Final Generation Outage Programme** for Year 3 to Year 5. If agreement cannot be reached on all aspects, **NGC** and each **Generator** will record their agreement on as many aspects as have been agreed and **NGC** will advise each **Generator** with **Large Power Stations** and each **Network Operator**, of the **Surpluses** for the **GB Transmission System** and **System Zones** on a weekly basis which would occur in relation to those aspects not agreed. It is accepted that agreement of the **Final Generation Outage Programme** is not a commitment on **Generators** or **NGC** to abide by it, but **NGC** will be planning the **GB Transmission System** outage programme on the basis of the **Final Generation Outage Programme** and if in the event the **Generator's** outages differ from those contained in the **Final Generation Outage Programme**, or in any way conflict with the **GB Transmission System** outage programme, **NGC** need not alter the **GB Transmission System** outage programme.

OC2.4.1.2.2 Operational Planning Phase - Planning for Calendar Year 1 and Calendar Year 2 – Weekly Resolution

The basis for **Operational Planning** for Year 1 and Year 2 will be the **Final Generation Outage Programmes** agreed for Years 2 and 3:

In each calendar year:

- (a) By the end of week 10

Each **Generator** will provide **NGC** in writing with its previously agreed **Final Generation Outage Programme** updated and best estimate weekly **Output Usable** forecasts for each **Genset** for weeks 1-52 of Years 1 and 2.

- (b) Between the end of week 10 and the end of week 12

NGC will be considering the updated proposed **GensetGenerating Unit** outage programme together with the estimate of **Output Usable** supplied by **Generators** under (a) and will be analysing **Operational Planning Margins** for the period. Taking these into account together with **GB**

Transmission System constraints and outages and **Network Operator User System** constraints and outages known to **NGC**, **NGC** will assess whether the estimates of **Output Usable** supplied by **Generators** are sufficient to meet forecast **GB Transmission System Demand** plus the **Operational Planning Margin**.

(c) By the end of week 12

NGC will:

- (i) notify each **Generator** in writing whether the **Output Usable** estimates are adequate for weeks 1-52 of Years 1 and 2, together with suggested changes to its **Final Generation Outage Programme** where necessary and will advise each **Generator** with **Large Power Stations** of the **Surpluses** both for the **GB Transmission System** and **System Zones** and potential export limitations, on a weekly resolution which would occur without such changes;
- (ii) provide each **Network Operator** in writing with weekly **Output Usable** estimates of **Generators** for weeks 1-52 of Years 1 and 2, and updated details of potential outages ~~of, in each case relating to **Gensets**~~**Generating Units** which may, in the reasonable opinion of **NGC** and the **Network Operator**, affect the integrity of that **Network Operator's User System** provided that, in such circumstances, **NGC** has notified the **Generator** concerned at least 48 hours beforehand of its intention to do so (including identifying the affected **Gensets** or **Generating Units**, as appropriate concerned).

(d) By the end of week 14

Where a **Generator** or a **Network Operator** is unhappy with any suggested changes to its **Final Generation Outage Programme** (in the case of a **Generator**) or such update of potential outages (in the case of a **Network Operator**), equivalent provisions to those set out in OC2.4.1.2.1(d) will apply.

(e) By the end of week 34

Each **Generator** will provide **NGC** in writing with revised best estimate weekly **Output Usable** forecasts for each **Genset** for weeks 1-52 of Years 1 and 2.

(f) Between the end of week 34 and the end of week 39

NGC will be analysing the revised estimates of **Output Usable** supplied by **Generators** under (e) and will be analysing **Operational Planning Margins** for the period. Taking these into account together with **GB Transmission System** constraints and outages and **Network Operator User System** constraints and outages known to **NGC**, **NGC** will assess whether the estimates of **Output Usable** supplied by **Generators** are sufficient to meet forecast **GB Transmission System Demand** plus the **Operational Planning Margin**.

(g) By the end of week 39

NGC will:

- (i) notify each **Generator** in writing whether it accepts the **Output Usable** estimates for weeks 1-52 of Years 1 and 2, and of any suggested changes to its **Final Generation Outage Programme** where necessary and will advise **Generators with Large Power Stations** of the **Surpluses** both for the **GB Transmission System** and **System Zones** and potential export limitations on a weekly basis which would occur without such changes;
 - (ii) provide each **Network Operator** in writing with **Output Usable** estimates of **Generators** for weeks 1-52 of Years 1 and 2, and updated details of potential outages ~~of, in each case relating to **Gensets/Generating Units**~~ which may, in the reasonable opinion of **NGC** and the **Network Operator**, affect the integrity of that **Network Operator's User System** provided that, in such circumstances, **NGC** has notified the **Generator** concerned at least 48 hours beforehand of its intention to do so (including identifying the affected **Gensets** or **Generating Units, as appropriate** concerned).
- (h) By the end of week 46

Where a **Generator** or a **Network Operator**, is unhappy with any suggested changes to its **Final Generation Outage Programme** (in the case of a **Generator**) or such update of potential outages (in the case of a **Network Operator**), equivalent provisions to those set out in OC2.4.1.2.1(d) will apply.

- (i) By the end of week 48

NGC will seek to agree the revised **Final Generation Outage Programme** for Year 1 and Year 2. If agreement cannot be reached on all aspects, **NGC** and each **Generator** will record their agreement on as many aspects as have been agreed and **NGC** will advise each **Generator with Large Power Stations** and each **Network Operator**, of **Generating Plant Demand Margins** for national and zonal groups, on a weekly basis, which would occur in relation to those aspects not agreed. It is accepted that agreement of the **Final Generation Outage Programme** is not a commitment on **Generators** or **NGC** to abide by it, but **NGC** will be planning the **GB Transmission System** outage programme on the basis of the **Final Generation Outage Programme** and if, in the event, a **Generator's** outages differ from those contained in the **Final Generation Outage Programme**, or in any way conflict with the **GB Transmission System** outage programme, **NGC** need not alter the **GB Transmission System** outage programme.

OC2.4.1.2.3 Planning for Calendar Year 0 – Weekly Resolution

The basis for **Operational Planning** for Year 0 will be the revised **Final Generation Outage Programme** agreed for Year 1:

In each week:

(a) By 1600 hours each Wednesday – Weekly Resolution

Each **Generator** will provide **NGC** in writing with an update of the **Final Generation Outage Programme** and a best estimate weekly **Output Usable** forecast for each of its **Gensets** from the 2nd week ahead to the 52nd week ahead.

(b) Between 1600 hours Wednesday and 1600 hours Friday

NGC will be analysing the revised estimates of **Output Usable** supplied by **Generators** under (a) and will be analysing **Operational Planning Margins** for the period. Taking into account **GB Transmission System** constraints and outages and **Network Operator User System** constraints and outages known to **NGC**, **NGC** will assess whether the estimates of **Output Usable** supplied by **Generators** are sufficient to meet forecast **GB Transmission System Demand** plus the **Operational Planning Margin**.

(c) By 1600 hours each Friday

NGC will:

- (i) notify each **Generator** with **Large Power Stations** and **Network Operator**, in writing if it considers the **Output Usable** forecasts will give **Surpluses** and potential export limitations both for the **GB Transmission System** and **System Zones** from the 2nd week ahead to the 52nd week ahead;
- (ii) provide each **Network Operator**, in writing with weekly **Output Usable** estimates of Gensets from the 2nd week ahead to the 52nd week ahead and updated outages ~~of, each relating to Gensets~~ Generating Units which may, in the reasonable opinion of **NGC** and the **Network Operator**, affect the integrity of that **Network Operator's User System** and in such circumstances, **NGC** shall notify the **Generator** concerned within 48 hours of so providing (including identifying the affected Gensets or Generating Units, as appropriate ~~concerned~~), from the 2nd week ahead to the 52nd week ahead.

OC2.4.1.2.4 Programming Phase – 2-49 Days Ahead – Daily Resolution(a) By 1200 hours each Friday

NGC will notify in writing each **Generator** with **Large Power Stations** and **Network Operator** if it considers the **Output Usable** forecasts will give MW shortfalls both nationally and for constrained groups for the period 2-7 weeks ahead.

(b) By 1100 hours each Business Day

Each **Generator** shall provide **NGC** in writing with the best estimate of daily **Output Usable** for each **Genset** for the period from and including day 2 ahead to day 14 ahead, including the forecast return to service date

for any such **Generating Unit** or **Power Park Module** subject to **Planned Outage** or breakdown.

- (c) By 1100 hours each Wednesday

For the period 2 to 49 days ahead, every Wednesday by 11:00 hours, each **Generator** shall provide **NGC** in writing best estimate daily **Output Usable** forecasts for each **Genset**, and changes (start and finish dates) to **Planned Outage** or to the return to service times of each **Genset**~~**Generating Unit**~~ which is subject to breakdown.

- (d) Between 1100 hours and 1600 hours each **Business Day**

NGC will be analysing the revised estimates of **Output Usable** supplied by **Generators** under (b) and will be analysing **Operational Planning Margins** for the period 2-14 days ahead. Taking into account **GB Transmission System** constraints and outages and **Network Operator User System** constraints and outages known to **NGC**, **NGC** will assess whether the estimates of **Output Usable** are sufficient to meet forecast **GB Transmission System Demand** plus the **Operational Planning Margin**.

- (e) By 1600 hours each **Business Day**

- (i) **NGC** will notify in writing each **Generator** with **Large Power Stations** and each **Network Operator**, of the **Surpluses** both for the **GB Transmission System** and **System Zones** and potential export limitations, for the period from and including day 2 ahead to day 14 ahead which it considers the **Output Usable** forecasts will give. The time of 1600 hours can only be met in respect of any **Generator** or **Network Operator** if all the information from all **Generators** was made available to **NGC** by 1100 hours and if a suitable electronic data transmission facility is in place between **NGC** and the **Generator** or the **Network Operator**, as the case may be, and if it is fully operational. In the event that any of these conditions is not met, or if it is necessary to revert to a manual system for analysing the information supplied and otherwise to be considered, **NGC** reserve the right to extend the timescale for issue of the information required under this sub-paragraph to each, or the relevant, **Generator** and/or **Network Operator** (as the case may be) provided that such information will in any event be issued by 1800 hours.

- (ii) **NGC** will provide each **Network Operator**, where it has an effect on that **User**, in writing with **Output Usable** estimates of **Gensets** from and including day 2 ahead to day 14 ahead and updated outages of, ~~each relating to **Gensets**~~**Generating Units** which are either in its **User System** or which may, in the reasonable opinion of **NGC** and the **Network Operator**, affect the integrity of that **Network Operator's User System** and in such circumstances, **NGC** shall notify the **Generator** concerned within 48 hours of so providing (including identifying the affected **Gensets** or **Generating Units, as**

appropriateconcerned), for the period from and including day 2 ahead to day 14 ahead.

OC2.4.1.3 Planning of GB Transmission System Outages

OC2.4.1.3.1 Operational Planning Phase - Planning for Financial Years 2 to 5 inclusive ahead

NGC shall plan **GB Transmission System** outages required in Years 2 to 5 inclusive required as a result of construction or refurbishment works. This contrasts with the planning of **GB Transmission System** outages required in Years 0 and 1 ahead, when **NGC** also takes into account **GB Transmission System** outages required as a result of maintenance.

Users should bear in mind that **NGC** will be planning the **GB Transmission System** outage programme on the basis of the previous year's **Final Generation Outage Programme** and if in the event a **Generator's** or **Network Operator's** outages differ from those contained in the **Final Generation Outage Programme**, or in the case of **Network Operators**, those known to **NGC**, or in any way conflict with the **GB Transmission System** outage programme, **NGC** need not alter the **GB Transmission System** outage programme.

OC2.4.1.3.2 In each calendar year:

(a) By the end of week 8

Each **Network Operator** will notify **NGC** in writing of details of proposed outages in Years 2-5 ahead in its **User System** which may affect the performance of the **Total System** (which includes but is not limited to outages of **User System Apparatus** at **Grid Supply Points** and outages which constrain the output of **GensetsGenerating Units** Embedded within that **User System**).

(b) By the end of week 13

Each **Generator** will inform **NGC** in writing of proposed outages in Years 2 - 5 ahead of **Generator** owned **Apparatus** (eg. busbar selectors) other than **GensetsGenerating Units**, at each **Grid Entry Point**.

NGC will provide to each **Network Operator** and to each **Generator** a copy of the information given to **NGC** under paragraph (a) above (other than the information given by that **Network Operator**). In relation to a **Network Operator**, the data must only be used by that **User** in operating that **Network Operator's User System** and must not be used for any other purpose or passed on to, or used by, any other business of that **User** or to, or by, any person within any other such business or elsewhere.

(c) By the end of week 28

NGC will provide each **Network Operator** in writing with details of proposed outages in Years 2-5 ahead which may, in **NGC's** reasonable

judgement, affect the performance of that **Network Operator's User System**.

- (d) By the end of week 30

Where **NGC** or a **Network Operator** is unhappy with the proposed outages notified to it under (a), (b) or (c) above, as the case may be, equivalent provisions to those set out in OC2.4.1.2.1 (d) will apply.

- (e) By the end of week 34

NGC will draw up a draft **GB Transmission System** outage plan covering the period Years 2 to 5 ahead and **NGC** will notify each **Generator** and **Network Operator** in writing of those aspects of the plan which may operationally affect such **Generator** (other than those aspects which may operationally affect **Embedded Small Power Stations** or **Embedded Medium Power Stations**) or **Network Operator**. **NGC** will also indicate where a need may exist to issue other operational instructions or notifications (including but not limited to the requirement for the arming of an **Operational Intertripping** scheme) or **Emergency Instructions to Users** in accordance with **BC2** to allow the security of the **GB Transmission System** to be maintained within the **Licence Standards**.

OC2.4.1.3.3 Operational Planning Phase - Planning for Financial Year 1 ahead

Each calendar year **NGC** shall update the draft **GB Transmission System** outage plan prepared under OC2.4.1.3.2 above and shall in addition take into account outages required as a result of maintenance work.

In each calendar year:

- (a) By the end of week 13

Generators and **Non-Embedded Customers** will inform **NGC** in writing of proposed outages for Year 1 of **Generator** owned **Apparatus** at each **Grid Entry Point** (e.g. busbar selectors) other than **Gensets/Generating Units** or **Non-Embedded Customer** owned **Apparatus**, as the case may be, at each **Grid Supply Point**.

- (b) By the end of week 28

NGC will provide each **Network Operator** and each **Non-Embedded Customer** in writing with details of proposed outages in Year 1 ahead which may, in **NGC's** reasonable judgement, affect the performance of its **User System** or the **Non-Embedded Customer Apparatus** at the **Grid Supply Point**.

- (c) By the end of week 32

Each **Network Operator** will notify **NGC** in writing with details of proposed outages in Year 1 in its **User System** which may affect the performance of the **Total System** (which includes but is not limited to outages of **User System Apparatus** at **Grid Supply Points** and outages which constrain

the output of **Gensets****Generating Units** **Embedded** within that **User System**).

- (d) Between the end of week 32 and the end of week 34

NGC will draw up a revised **GB Transmission System** outage plan (which for the avoidance of doubt includes **Transmission Apparatus** at the **Connection Points**).

- (e) By the end of week 34

NGC will notify each **Generator** and **Network Operator**, in writing, of those aspects of the **GB Transmission System** outage programme which may, in **NGC's** reasonable opinion, operationally affect that **Generator** (other than those aspects which may operationally affect **Embedded Small Power Stations** or **Embedded Medium Power Stations**) or **Network Operator** including in particular proposed start dates and end dates of relevant **GB Transmission System** outages.

NGC will provide to each **Network Operator** and to each **Generator** a copy of the information given to **NGC** under paragraph (c) above (other than the information given by that **Network Operator**). In relation to a **Network Operator**, the data must only be used by that **User** in operating that **Network Operator's User System** and must not be used for any other purpose or passed on to, or used by, any other business of that **User** or to, or by, any person within any other such business or elsewhere.

- (f) By the end of week 36

Where a **Generator** or **Network Operator** is unhappy with the proposed aspects notified to it under (e) above, equivalent provisions to those set out in OC2.4.1.2.1 (d) will apply.

- (g) Between the end of week 34 and 49

NGC will draw up a final **GB Transmission System** outage plan covering Year 1.

- (h) By the end of week 49

(i) **NGC** will complete the final **GB Transmission System** outage plan for Year 1. The plan for Year 1 becomes the final plan for Year 0 when by expiry of time Year 1 becomes Year 0.

(ii) **NGC** will notify each **Generator** and each **Network Operator** in writing of those aspects of the plan which may operationally affect such **Generator** (other than those aspects which may operationally affect **Embedded Small Power Stations** or **Embedded Medium Power Stations**) or **Network Operator** including in particular proposed start dates and end dates of relevant **GB Transmission System** outages. **NGC** will also indicate where a need may exist to issue other operational instructions or notifications (including but not limited to the requirement for the arming of an **Operational**

Intertripping scheme) or **Emergency Instructions to Users** in accordance with **BC2** to allow the security of the **GB Transmission System** to be maintained within the **Licence Standards**. **NGC** will also inform each relevant **Non-Embedded Customer** of the aspects of the plan which may affect it.

~~(iii) In addition, in relation to the final **GB Transmission System** outage plan for Year 1, **NGC** will provide to each **Generator** a copy of the final **GB Transmission System** outage plan for that year. OC2.4.1.3.4 contains provisions whereby updates of the final **GB Transmission System** outage plan are provided. The plan and the updates will be provided in writing. It should be noted that the final **GB Transmission System** outage plan for Year 1 and the updates will not give a complete understanding of how the **GB Transmission System** will operate in real time, where the **GB Transmission System** operation may be affected by other factors which may not be known at the time of the plan and the updates. Therefore, **Users** should place no reliance on the plan or the updates showing a set of conditions which will actually arise in real time.~~

(i) Information Release or Exchange

This paragraph (i) contains alternative requirements on **NGC**, paragraph (z) being an alternative to a combination of paragraphs (x) and (y). Paragraph (z) will only apply in relation to a particular **User** if **NGC** and that **User** agree that it should apply, in which case paragraphs (x) and (y) will not apply. In the absence of any relevant agreement between **NGC** and the **User**, **NGC** will only be required to comply with paragraphs (x) and (y).

Information Release to each **Network Operator** and **Non-Embedded Customer**

Between the end of Week 34 and 49 **NGC** will upon written request:

- (x) for radial systems, provide each **Network Operator** and **Non Embedded Customer** with data to allow the calculation by the **Network Operator**, and each **Non Embedded Customer**, of symmetrical and asymmetrical fault levels; and
- (y) for interconnected **Systems**, provide to each **Network Operator** an equivalent network, sufficient to allow the identification of symmetrical and asymmetrical fault levels, and power flows across interconnecting **User Systems** directly connected to the **GB Transmission System**;
or

System Data Exchange

- (z) as part of a process to facilitate understanding of the operation of the **Total System**,
 - (1) **NGC** will make available to each **Network Operator**, the **GB Transmission System Study Network Data Files** covering Year 1 which are of relevance to that **User's System**;

- (2) where **NGC** and a **User** have agreed to the use of data links between them, the making available will be by way of allowing the **User** access to take a copy of the **GB Transmission System Study Network Data Files** once during that period. The **User** may, having taken that copy, refer to the copy as often as it wishes. Such access will be in a manner agreed by **NGC** and may be subject to separate agreements governing the manner of access. In the absence of agreement, the copy of the **GB Transmission System Study Network Data Files** will be given to the **User** on a disc, or in hard copy, as determined by **NGC**;
- (3) the data contained in the **GB Transmission Study Network Data Files** represents **NGC's** view of indicative operating conditions only and should be used for technical analysis only on the basis that it only represents a view and that operating conditions may be different in the event;
- (4) **NGC** will notify each **Network Operator**, as soon as reasonably practicable after it has updated the **GB Transmission System Study Network Data Files** covering Year 1 that it has done so, when this update falls before the next annual update under this OC2.4.1.3.3(i). **NGC** will then make available to each **Network Operator** who has received an earlier version (and in respect of whom the agreement still exists), the updated **GB Transmission System Study Network Files** covering the balance of Years 1 and 2 which remain given the passage of time, and which are of relevance to that **User's System**. The provisions of paragraphs (2) and (3) above shall apply to the making available of these updates;
- (5) the data from the **GB Transmission System Study Network Data Files** received by each **Network Operator** must only be used by that **User** in operating that **Network Operator's User System** and must not be used for any other purpose or passed on to, or used by, any other business of that **User** or to, or by, any person within any other such business or elsewhere.

OC2.4.1.3.4 **Operational Planning Phase - Planning in Financial Year 0 down to the Programming Phase (and in the case of load transfer capability, also during the Programming Phase)**

- (a) The **GB Transmission System** outage plan for Year 1 issued under OC2.4.1.3.3 shall become the plan for Year 0 when by expiry of time Year 1 becomes Year 0.
- (b) Each **Generator** or **Network Operator** or **Non-Embedded Customer** may at any time during Year 0 request **NGC** in writing for changes to the outages requested by them under OC2.4.1.3.3. In relation to that part of Year 0, excluding the period 1-7 weeks from the date of request, **NGC** shall determine whether the changes are possible and shall notify the **Generator, Network Operator** or **Non-Embedded Customer** in question whether this is the case as soon as possible, and in any event within 14 days of the date of receipt by **NGC** of the written request in question.

Where **NGC** determines that any change so requested is possible and notifies the relevant **User** accordingly, **NGC** will provide to each **Network Operator** and each **Generator** a copy of the request to which **NGC** has agreed which relates to outages on **Systems of Network Operators** (other than any request made by that **Network Operator**). The information must only be used by that **Network Operator** in operating that **Network Operator's User System** and must not be used for any other purpose or passed on to, or used by, any other business of that **User** or to, or by, any person within any other such business or elsewhere.

- (c) During Year 0 (including the **Programming Phase**) each **Network Operator** shall at **NGC's** request make available to **NGC** such details of automatic and manual load transfer capability of:
- (i) 12MW or more (averaged over any half hour) for England and Wales
 - (ii) 10MW or more (averaged over any half hour) for Scotland

between **Grid Supply Points**.

- (d) When necessary during Year 0, **NGC** will notify each **Generator** and **Network Operator** and each **Non-Embedded Customer**, in writing of those aspects of the **GB Transmission System** outage programme in the period from the 8th week ahead to the 52nd week ahead, which may, in **NGC's** reasonable opinion, operationally affect that **Generator** (other than those aspects which may operationally affect **Embedded Small Power Stations** or **Embedded Medium Power Stations**) or **Network Operator** or **Non-Embedded Customer** including in particular proposed start dates and end dates of relevant **GB Transmission System** outages.

NGC will also notify changes to information supplied by **NGC** pursuant to OC2.4.1.3.3(i)(x) and (y) except where in relation to a **User** information was supplied pursuant to OC2.4.1.3.3(i)(z). In that case:-

- (i) **NGC** will, by way of update of the information supplied by it pursuant to OC2.4.1.3.3(i)(z), make available at the first time in Year 0 that it updates the **GB Transmission System Study Network Data Files** in respect of Year 0 (such update being an update on what was shown in respect of Year 1 which has then become Year 0) to each **Network Operator** who has received an earlier version under OC2.4.1.3.3(i)(z) (and in respect of whom the agreement still exists), the **GB Transmission System Study Network Data Files** covering Year 0 which are of relevance to that **User's System**.
- (ii) **NGC** will notify each relevant **Network Operator**, as soon as reasonably practicable after it has updated the **GB Transmission System Study Network Data Files** covering Year 0, that it has done so. **NGC** will then make available to each such **Network Operator**, the updated **GB Transmission System Study Network Data Files** covering the balance of Year 0 which remains given the passage of time, and which are of relevance to that **User's System**.
- (iii) The provisions of OC2.4.1.3.3(i)(z)(2), (3) and (5) shall apply to the provision of data under this part of OC2.4.1.3.4(d) as if set out in full.

NGC will also indicate where a need may exist to issue other operational instructions or notifications (including but not limited to the requirement for the arming of an **Operational Intertripping** scheme) or **Emergency Instructions to Users** in accordance with **BC2** to allow the security of the **GB Transmission System** to be maintained within the **Licence Standards**.

~~(e) In addition, by the end of each month during Year 0, **NGC** will provide to each **Generator** a notice containing any revisions to the final **GB Transmission System** outage plan for Year 1, provided to the **Generator** under OC2.4.1.3.3 or previously under this provision, whichever is the more recent.~~

< End of proposed changes to OC2 >