B/12 Formalising Synchronising Interval, De-Synchronising Interval, And Last Time To Cancel Synchronisation As Dynamic Parameters

What stage is this document at?

01	Workgroup Report
02	Industry Consultation
03	Report to the Authority

This proposal seeks to modify the Grid Code to formalise the dynamic parameters of Station Synchronising Interval, Station De-Synchronising Interval, and Last Time to Cancel Synchronisation, as well as removing references to Synchronising and De-Synchronising Intervals which would conflict with the new parameter definitions.

This document is open for Industry Consultation. Any interested party is able to make a response in line with the guidance set out in Section 6 of this document.

Published on: **31 August 2012**
Length of Consultation: **15 Working Days**
Responses by: **21 September 2012**

National Grid recommends:
That Synchronising Interval, De-Synchronising Interval, and Last Time to Cancel Synchronisation are formalised as dynamic parameters within the Grid Code.

High Impact:
Generators, National Grid.

Medium Impact:
None identified.

Low Impact:
None identified.

Contents

Any Questions?

Contact:

Nick Sargent

Nick.Sargent@nationalgrid.com

01926 653873

Proposer:

Electricity Balancing System Group (EBSG)

About this document

This Industry Consultation outlines the information required for interested parties to form an understanding of a defect within the Grid Code seeks the views of interested parties in relation to the issues raised by this document.

Parties are requested to respond by **21 September 2012** to grid.code@nationalgrid.com

Document Control

Version	Date	Author	Change Reference
0.1	20 August 2012	National Grid	Draft Industry Consultation
1.0	31 August 2012	National Grid	Industry Consultation

1 Executive Summary

1.1 The dynamic parameters of Station Synchronising Interval, Station De-Synchronising Interval, and Last Time to Cancel Synchronisation may be submitted by Generators and adhered to by the System Operator, but are not formally recognised within the Grid Code Balancing Codes that cover the operation of the Balancing Mechanism. Some of these parameters are listed in Appendix 2 of OC2, but OC2 concerns itself with the longer-term Operational Planning phase. It was considered that in order to improve understanding and transparency around the submission and use of these parameters, they should be formally recognised within the Grid Code Balancing Codes. The Electricity Balancing System Group (EBSG), a Workgroup reporting to the GCRP, subsequently undertook a consultation to request industry views on whether these dynamic parameters should be formalised within the Grid Code and whether these parameters should include upper limits.

1.2 There were nine responses to the consultation, the vast majority of which were in favour of formalising each of the three subject parameters.

1.3 It was considered that the Station Synchronising Interval and Station De-Synchronising Interval parameters should not include an upper limit, as such a limit would not contain actions within the BM window, for example, where after synchronisation, a BM Unit may take several hours to run up to its Stable Export Limit. However, for the purposes of the IT system interface definition, a limit of 999 minutes would be applied to these parameters. It was also recommended to apply the Synchronising Interval and De-Synchronising Interval on a BM Unit level and not a Station level in order to address the situation where the intervals are different for different Units in a Station, and in order to remain consistent with BMRA reporting which currently does not have Station as an entity.

1.4 The initial assumption up to the EBSG Workgroup meeting of May 2012 was that these parameters would be on a Station level rather than a BM Unit level. This was consistent with the definition under the Pool Arrangements as well as current custom and practice relating to Other Relevant Data under NETA, and as such, Station level parameters were specified in National Grid's forthcoming IT System, the Electricity Balancing System (EBS). The move of the Workgroup's preference from Station level parameters to BM Unit level parameters would require a subsequent change to EBS and could be considered for incorporation into EBS some time after the go-live of the new system.

1.5 This consultation proposes two options for the implementation of these changes:

- **Option 1** - To continue managing this data under the provisions of Other Relevant Data, i.e. each remains a non-binding parameter on the SO, until such time that the new EBS system can support BM Unit level definitions, at which point formal definitions would be introduced into the Grid Code, or

- **Option 2** - To formalise Station level parameters now and then change the definitions to BM Unit level when the new EBS system can support that definition.

1.6 **Option 1** only requires one change to the Grid Code, when the EBS system is capable of accepting the revised data requirement, and avoids the potential confusion of formalising a Station-level parameter where National Grid currently takes into account some BM Unit level variation. **Option 2**

however, will allow these parameters to be formalised more quickly but will require another change to the Grid Code when the EBS system is able to support a BM Unit level definition.

1.7 As regards formalising a Last Time to Cancel Synchronisation parameter within the Balancing Codes, the majority of respondents supported this and following subsequent Workgroup discussion, it was recommended to apply an upper limit of 60 minutes to allow the cancellation of a transition from zero (synchronisation) at any point within the Balancing Mechanism Window.

1.8 Both the existing system and the new EBS system can support the proposed definition for Last Time to Cancel Synchronisation except for the recognition of an upper limit. As this data is expected to rarely change, it can be submitted and validated by fax until such time as the new EBS system is ready to accept electronic submissions.

1.9 In order to apply the changes resulting from the above recommendation in **Option 1**, the Grid Code will need to be amended to remove existing definitions and references in:

- OC2.A.2
- BC1.4.2 (f)
- Data Registration Code Schedule 2

1.10 New definitions for Synchronising Interval, De-Synchronising Interval (both at BM Unit level), and Last Time to Cancel Synchronisation (with upper limit) will need to be added to:

- BC1.A.1.5

1.11 Under **Option 2**, additional amendments would need to be made in the near term to update text to reflect that fax submissions of data will be acceptable in:

- BC1.4.1

1.12 New definitions for Station Synchronising Interval, Station De-Synchronising Interval (both at Station level), and Last Time to Cancel Synchronisation (with upper limit) will need to be added to:

- BC1.A.1.5

1.13 Once the EBS system reaches the capability to support all changes, the Grid Code changes under **Option 1** above will be undertaken.

1.14 The consequences of not making these proposed changes would be to have no definitions for these widely-used items of data in the relevant sections of the Grid Code which would adversely impact on the shared understanding, between National Grid and Generators, of the definition of these parameters and the circumstances in which they would be complied with. If the changes are made, they would improve overall transparency to all parties, supporting Grid Code objective (ii), related to facilitating competition.

2 Why Change?

2.1 The dynamic parameters of Station Synchronising Interval, Station De-Synchronising Interval, and Last Time to Cancel Synchronisation may be submitted by Generators as Other Relevant Data under BC1.4.2(f)(v). NGET aims to adhere to these parameters, but they are not formally defined or applied within the relevant part of the Grid Code, the Balancing Codes. As such, it is considered that this causes confusion as to their definition and use and does not promote transparency in the market.

2.2 The Electricity Balancing System Group (EBSG), a Workgroup reporting to the Grid Code Review Panel, undertook a consultation[1], published on 29 March 2012, to ask for views on whether the dynamic parameters of Station Synchronising Interval, Station De-Synchronising Interval, and Last Time to Cancel Synchronisation, should therefore be formalised within the Grid Code, and if each of the subject parameters should have an upper limit.

2.3 The consequences of not making these proposed changes to the Grid Code would be to adversely impact the shared understanding, between National Grid and Generators, of the definition of these parameters and the circumstances in which they would be complied with. A clear understanding by the parties of the definition and use of parameters is particularly important in continuous operational environments, where specialist advice and interpretation may be unavailable outside of normal office hours. If the changes are made, they could improve overall transparency to all parties, supporting Grid Code objective (ii).

2.4 These dynamic parameters represent physical constraints on a generating unit for which there is no alternative form of Grid Code submission to achieve the required outcome.

2.5 A Workgroup report dated 09 July 2012[2] presented the group's recommendations to the GCRP.

[1] The consultation was entitled B/12 Formalising Two Shifting Limit and other parameters. Following an interim update to the GCRP of 04 May 2012 presenting the consultation responses and next steps, the GCRP elected to review Two Shifting Limit further to, and in addition to, the work already completed under the consultation. As such, reference to Two Shifting Limit is not included in this document.

[2] The consultation can be found on www.nationalgrid.com/uk/Electricity/Codes/gridcode/consultationpapers

3 Summary of Workgroup Discussions

3.1 Nine responses were received to the consultation published on 29 March 2012.

Station Synchronising and Station De-Synchronising Intervals

3.2 As Station Synchronising Interval and Station De-Synchronising Interval parameters are generally complied with, respondents to the consultation were in favour of formalising them both but had mixed views on whether upper limits should apply to each parameter and what value these limits, if any, should take.

3.3 In Workgroup discussions it was acknowledged that restricting the value of the parameters to be within the Balancing Mechanism Window would not contain their impact within the window, as after synchronisation BM Units may take several hours to run up to their Stable Export Limit. In addition, certain stations have technical parameters that, under certain circumstances, would exceed the extent of the Balancing Mechanism Window. It was thought desirable that data submitted to National Grid should be technically accurate and not subject to revision at short notice as this could have implications for the safe and secure operation of the system. However, the Workgroup was of the view that the use of these parameters should be subject to BC2.7.2(b) regarding operation beyond the Balancing Mechanism Window. The Workgroup concluded that upper limits should not apply to the Station Synchronising Interval and Station De-Synchronising Interval parameters providing the application of these limits is subject to BC2.7.2(b).

3.4 The Workgroup also considered whether, rather than having one Synchronising Interval and one De-synchronising Interval per station that would be applicable for all BM Units within the station, there should be one Synchronising Interval and one De-synchronising Interval per BM Unit. One value for each per BM Unit would recognise that the intervals may be different for different units in a station e.g. because of their thermal state or environmental reasons, and it would also mean they could be reported on the BMRA system against a BM Unit (the BMRA system does not currently have Station as an entity). The EBSG concluded that there should be one Synchronising Interval and one De-synchronising Interval per BM Unit. As a result, the word “Station” would need to be removed from the title of each parameter when formalised at the BM Unit level.

Last Time to Cancel Synchronisation dynamic parameter

3.5 The Workgroup was in agreement with the majority of the consultation responses that there should be an upper limit on Last Time to Cancel Synchronisation. The Workgroup’s view was that this should be a maximum of 60 minutes to allow cancellation of a transition from zero (synchronisation) at any point in the final half-hour of the Balancing Mechanism Window.

3.6 Given the reservations expressed in the consultation responses regarding the use of this parameter to manage the notice required to re-synchronise a BM Unit which has a non-zero Physical Notification, but has been issued Bid-Offer Acceptances to keep it de-synchronised, a definition was proposed that seeks to avoid its use in this way. It does this by making it applicable only when the synchronisation has arisen from a non-zero Physical Notification or where the Physical Notification is zero, from a Bid-Offer Acceptance.

Workgroup Recommendations

3.7 In its report of 09 July 2012 the EBSG Workgroup made the following recommendations to the GCRP:

- Station Synchronising Interval and Station De-Synchronising Interval parameters are formalised as Balancing Code dynamic parameters on a per BM Unit basis with an upper limit of 999 minutes, subject to the provisions of BC2.7.2(b). In support of the recommendation to formalise these parameters at BM Unit level, each parameter will have the word "Station" removed from its title as part of the changes and will be known as Synchronising Interval (SI) and De-Synchronising Interval (DI).

- Last Time to Cancel Synchronisation is formalised as a dynamic parameter with an upper limit of 60 minutes within the Grid Code Balancing Codes.

3.8 To complete this change, existing references to Synchronising and De-Synchronising Intervals within the Grid Code will need to be deleted in OC2.A.2.2 and OC2.A.2.3, and BC1.4.2 (f) (v) as they are no longer required to be referenced in these sections, prior to the addition of new definitions for Synchronising Interval, De-Synchronising Interval and Last Time to Cancel Synchronisation in BC1.A.1.5. The references to Synchronising and De-Synchronising Intervals in OC2 Appendix 2 dating from the Pool Arrangements are defined at a Station level, and National Grid does not require this data for the purposes of Generation Planning.

4 Discussion regarding timescales and arrangements for implementation

Synchronising and De-Synchronising Intervals

4.1 Until the EBSG Workgroup meeting on 1st May 2012, the initial assumption had been that these parameters would be on a Station level, rather than a BM Unit level, as per the definition under the old Pool Arrangements and custom and practice relating to Other Relevant Data under NETA. Consequently, the Station-level definition was used in specifying National Grid's new IT system (EBS), due to go-live in the second half of 2013. However, at this and subsequent EBSG Workgroup meetings, industry representatives proposed that the definition should be on a BM Unit level. As this revised definition offers advantages in terms of correctly representing the nature of the generators' restrictions and facilitates publication on the BMRA, this definition was adopted by the Workgroup.

4.2 In section 4.4.2 of National Grid's consultation of 7 October 2008[3], it was anticipated that a period of stability was required in order for the new EBS system to be delivered and function reliably. We are now within that period with the developers focussing on delivering the system as currently specified. In addition, to avoid imposing IT changes on market participants for the go-live of the new IT system, it was established through previous industry consultations and Workgroups that any new or changed data could only be submitted via the new industry interfaces which are planned to be made available from six months after system go-live.

4.3 At this stage, it is not possible to know with certainty the precise go-live date and hence a definitive implementation date for the changes proposed in this consultation. When EBSG was established, the intention was to develop Grid Code changes in a timely manner such that these would be readily available for a formal industry consultation at a later, more appropriate, time e.g. when a precise implementation date was known for inclusion in the legal text. This is particularly the case for a move from Station level parameters to BM Unit level parameters which require changes to both EBS's data exchange facilities and to its scheduling algorithms, and as such, could only be considered for incorporation into EBS some time after system go-live. In the absence of a definitive implementation date, the legal text provided may not be suitable for inclusion in the Grid Code.

4.4 In terms of timescales and arrangements for implementation, there appear to be two options:

- **Option 1**: Continue managing this data under the provisions of Other Relevant Data i.e. each remains a non-binding parameter on the SO, until such time that the new EBS system can support BM Unit level definitions, at which point formal definitions would be introduced into the Grid Code or,

- **Option 2**: Formalise Station level parameters now and then change the definitions to a BM Unit level when the new EBS system can support that definition.

[3] http://www.nationalgrid.com/NR/rdonlyres/B961884A-EC28-4771-A40F-02F254B00A18/28752/bmrepconsultationv10.pdf

Discussion

4.5 **Option 1** avoids two separate changes to the Grid Code definition which would arise under **Option 2** i.e. an interim Station level definition and a subsequent BM Unit level definition. Two changes in quick succession under **Option 2** may cause unnecessary confusion especially for those market participants who currently submit data that has some variation by unit within a station. Omissions and errors aside, National Grid has complied with these Other Relevant Data parameters since NETA go-live in 2001 and expects to continue to do so. Therefore an interim change to formalise the definitions on a Station level basis may have little effect in practice. On the other hand, formalising an interim Station level definition may provide market participants with greater reassurance that these parameters will be complied with. In terms of communicating these parameters to National Grid, given the low volume of re-declarations of these parameters (a few a year), then in both cases fax submissions would continue to be viable until the EBS system is ready to receive the data electronically. However, for formal dynamic parameters covered by BC1.4.2(e), BC1.4.1(a) states that they "may be revised by telephone following its initial submission by electronic data communication facilities" which in its current form would seem to preclude the submission of formal parameters by fax. This could be addressed by modifying this section of the Grid Code to read "may be submitted by telephone or fax."

4.6 For those market participants who currently submit data that has some variation by unit within a station, both options would require data to be submitted at Station level. However, any variation by unit could still be submitted via Other Relevant Data.

Publication of any new formal dynamic parameters

4.7 Making changes to National Grid's existing BM Systems to allow the publication of any new dynamic parameters is not considered to be an economic or efficient option. This is because it is likely to result in a significant cost, take many months to design, code and test the changes to this critical system which may have a remaining service life of no more than a year from now. In addition the design, coding and testing effort will take National Grid resource away from delivering the new EBS system and it is highly likely that it will cause multi-month delays to the EBS project.

4.8 Therefore National Grid's proposal would be to publish this infrequently-changing data once a week on its website until EBS is ready to send this data to the BMRA and the BMRA is ready to publish it.

Question One

Do you think it would be acceptable that Synchronising Interval and De-Synchronising Interval continue to be Other Relevant Data until the EBS IT System is ready to support a BM Unit-based definition, or do you think that a Station level definition should be formalised in the meantime, data submitted by fax, and published once a week on National Grid's website? Please tell us the reasons behind your answer.

Last Time to Cancel Synchronisation

4.9 Both the current BM Systems and the new EBS system can support the proposed definition of Last Time to Cancel Synchronisation except for the upper limit of 60 minutes which arose from the responses to the 29 March 2012 consultation. To date, this data has not often changed from one year to the next and, if this continues to be the case, fax would continue to be a

viable means of submitting it until the new EBS system is ready to receive it electronically and validate it against the upper limit. Also any faxes submitted containing values above the upper limit can be rejected and returned to the sender. The issue, raised under the heading of Synchronising and De-Synchronising Intervals, that BC1.4.1(a) currently does not allow the use of faxes also applies to Last Time to Cancel Synchronisation.

Question Two

Do you agree that the Last Time to Cancel Synchronisation parameter should be formalised now, and that this data should be communicated by fax, and published once a week on National Grid's website until the new EBS IT System is able to receive the data electronically and send it to the BMRA? Please tell us the reasons behind your answer.

5 Impact & Assessment

Impact on the Grid Code – Option 1 (Section 4.4)

5.1 Proposed Option 1 of B/12 will require amendments to the following parts of the Grid Code once the new EBS IT system is capable of accepting the revised data:

- OC2.A.2 – deletion of references to Synchronising Intervals and De-Synchronising Intervals
- BC1.4.2 (f) (v) - deletion of references to Synchronising Intervals and De-Synchronising Intervals
- BC1.A.1.5 – addition of definitions for Synchronising Interval, De-Synchronising Interval, and Last Time to Cancel Synchronisation.
- Data Registration Code Schedule 2 – deletion of existing references to Station Synchronising Intervals and De-Synchronising Intervals.

5.2 The text required to give effect to the proposed changes is contained in Annex 1 of this document.

Impact on the Grid Code – Option 2 (Section 4.4)

5.3 Proposed Option 2 of B/12 requires amendments to the following parts of the Grid Code in the near term:

- OC2.A.2 – deletion of references to Synchronising Intervals and De-Synchronising Intervals.
- BC1.4.1 (a) – addition of text to include revision of data by fax following initial submission.
- BC1.4.2 (f) (v) - deletion of references to Synchronising Intervals and De-Synchronising Intervals BC1.4.1 (a) – addition of text to include revision of data by fax following initial submission.
- BC1.A.1.5 – addition of definitions for Station Synchronising Interval, Station De-Synchronising Interval, and Last Time to Cancel Synchronisation.
- Data Registration Code Schedule 2 – deletion of existing references to Station Synchronising Intervals and De-Synchronising Intervals.

5.4 Once the EBS system reaches the capability to support all changes, the following Grid Code change will be undertaken.

- BC1.A.1.5 – amendment to the definitions to reflect Synchronising Interval and De-Synchronising Interval at BM Unit level.

5.5 The additional text for Option 2 required to give effect to the proposed changes is contained in Annex 2 of this document.

Impact on National Electricity Transmission System (NETS)

5.6 The proposed modification does not impact on the physical or operational performance of the NETS.

Impact on Grid Code Users

5.7 The proposed modification will provide clarity and certainty to the Grid Code community around the treatment of the parameters concerned compared with their current status as Other Relevant Data that National Grid may take account of.

Impact on Greenhouse Gas emissions

5.8 It is unlikely that the proposed modification will have any impact on Greenhouse Gas emissions.

Assessment against Grid Code Objectives

5.9 National Grid considers that these recommendations would better facilitate the Grid Code objective (ii):

(i) to permit the development, maintenance and operation of an efficient, coordinated and economical system for the transmission of electricity;

The proposal has a neutral impact on this objective.

(ii) to facilitate competition in the generation and supply of electricity (and without limiting the foregoing, to facilitate the national electricity transmission system being made available to persons authorised to supply or generate electricity on terms which neither prevent nor restrict competition in the supply or generation of electricity):

The proposed modifications would provide an improved shared understanding, between National Grid and Generators, of the definition of these parameters and the circumstances in which they would be complied with. A shared understanding of the definition and use of parameters is particularly important in continuous operational environments, where expert advice may be unavailable outside of normal office hours. The requirement for expert advice, and especially continuously-available advice, represents a barrier to entry for potential participants in the generation of electricity and does not facilitate competition. Therefore the proposed modifications support this objective.

(iii) subject to sub-paragraphs (i) and (ii), to promote the security and efficiency of the electricity generation, transmission and distribution systems in the national electricity transmission system operator area taken as a whole; and

The proposal has a neutral impact on this objective.

(iv) to efficiently discharge the obligations imposed upon the licensee by this licence and to comply with the Electricity Regulation and any relevant legally binding decisions of the European Commission and/or the Agency.

The proposal has a neutral impact on this objective.

Impact on core industry documents

5.10 The proposed modification does not impact on any core industry documents.

Impact on other industry documents

5.11 These recommendations would impact Grid Code Associated Documents such as the Data Validation, Consistency & Defaulting Rules and the BMRA & SAA Interface Specification.

Implementation

5.12 The implementation process will be dependant on the responses received to the questions posed within Section 4 of this consultation which will decide which option will be most suitable for the formalisation of the subject parameters.

6 Consultation Responses

6.1 Views are invited upon the proposals outlined in this consultation, which should be received by **21 September 2012**.

Your formal responses may be emailed to:

grid.code@nationalgrid.com

6.2 Responses are invited to the following questions;

Specific Questions:

(i) Do you think it would be acceptable that Synchronising Interval and De-Synchronising Interval continue to be Other Relevant Data until the EBS IT System is ready to support a BM Unit-based definition, or do you think that a Station level definition should be formalised in the meantime, data submitted by fax, and published once a week on National Grid's website? Please tell us the reasons behind your answer.

(ii) Do you agree that the Last Time to Cancel Synchronisation parameter should be formalised now, and that this data should be communicated by fax and published, once a week, on National Grid's website until the new EBS IT System is able to receive the data electronically and send it to the BMRA? Please tell us the reasons behind your answer.

General Questions:

(iii) Do you agree with the proposed changes to the Grid Code?

(iv) Do you believe that B/12 better facilitates the Applicable Grid Code Objectives as set out in paragraph 5.9?

(v) Do you support the proposed implementation approaches provided by the options given?

6.3 If you wish to submit a confidential response please note the following:

(i) Information provided in response to this consultation will be published on National Grid's website unless the response is clearly marked "Private & Confidential", we will contact you to establish the extent of the confidentiality. A response marked "Private and Confidential" will be disclosed to the Authority in full but, unless agreed otherwise, will not be shared with the Grid Code Review Panel or the industry and may therefore not influence the debate to the same extent as a non confidential response.

(ii) Please note an automatic confidentiality disclaimer generated by your IT System will not in itself, mean that your response is treated as if it had been marked "Private and Confidential".

Annex 1 - Proposed Legal Text: Option 1 (ref 4.3.1)

This section contains the proposed legal text to give effect to the proposals under Option 1. The proposed new text is in red and is based on Grid Code Issue 4 Revision 13.

Change required to OC2.A.2

Delete: OC2.A.2.2 Synchronising Intervals

Delete: OC2.A.2.3 De-Synchronising Intervals

OC2 APPENDIX 2

OC2.A.2 **Generation Planning Parameters**

The following parameters are required in respect of each **Genset**.

OC2.A.2.1 Regime Unavailability

Where applicable the following information must be recorded for each **Genset**.

- Earliest synchronising time:
  Monday
  Tuesday to Friday
  Saturday to Sunday

- Latest de-synchronising time:
  Monday to Thursday
  Friday
  Saturday to Sunday

~~OC2.A.2.2 **Synchronising** Intervals~~

~~(a) The **Synchronising** interval between **Gensets** in a **Synchronising Group** assuming all **Gensets** have been **Shutdown** for 48 hours;~~

~~(b) The **Synchronising Group** within the **Power Station** to which each **Genset** should be allocated.~~

~~OC2.A.2.3 **De-Synchronising** Interval~~

~~A fixed value **De-Synchronising** interval between **Gensets** within a **Synchronising Group.**~~

OC2.A.2.4 **Synchronising Generation**

The amount of MW produced at the moment of **Synchronising** assuming the **Genset** has been **Shutdown** for 48 hours.

OC2.A.2.5 Minimum Non-zero time (MNZT)

The minimum period on-load between **Synchronising** and **De-Synchronising** assuming the **Genset** has been **Shutdown** for 48 hours.

OC2.A.2.6 Run-Up rates

A run-up characteristic consisting of up to three stages from **Synchronising Generation** to **Output Usable** with up to two intervening break points assuming the **Genset** has been **Shutdown** for 48 hours.

OC2.A.2.7 Run-down rates

A run down characteristic consisting of up to three stages from **Output Usable** to **De-Synchronising** with breakpoints at up to two intermediate load levels.

OC2.A.2.8 Notice to Deviate from Zero (NDZ)

The period of time normally required to **Synchronise** a **Genset** following instruction from **NGET** assuming the **Genset** has been **Shutdown** for 48 hours**.**

OC2.A.2.9 Minimum Zero time (MZT)

The minimum interval between **De-Synchronising** and **Synchronising** a **Genset.**

OC2.A.2.10 Two Shifting Limit

The maximum number of times that a **Genset** may **De-Synchronise** per **Operational Day**.

OC2.A.2.11 **Gas Turbine Units** loading parameters

- Loading rate for fast starting
- Loading rate for slow starting

Change required to BC1.4.2 (f) (v)

Delete: Text "(eg, **Synchronising** or **De-Synchronising** Intervals, the minimum notice required to cancel a **Synchronisation**, etc):" from BC1.4.2 (f) (v)

BC1.4.2 Day Ahead Submissions

(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 **NGET** (save in respect of item (vi) where the item shall be submitted only when reasonably required by **NGET**), 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 **NGET** 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.

(vii) in the case of a **Power Park Module**, a **Power Park Module Availability 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**.

Change required to BC1.A.1.5

Insert new definition for: Synchronising Interval

Insert new definition for: De-Synchronising Interval

Insert new definition for: Last Time to Cancel Synchronisation

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 **National Electricity 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 **National Electricity Transmission System**;

- Maximum Delivery Volume (MDV), expressed in MWh, being the maximum number of MWh 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;

- Synchronising Interval (SI), expressed in minutes, being the minimum time that must elapse before a **BM Unit** at a **Power Station** may

transition from operation at zero following the previous transition from operation at zero of another **BM Unit** at the same **Power Station**;

- De-Synchronising Interval (DSI), expressed in minutes, being the minimum time that must elapse before a **BM Unit** at a **Power Station** may transition to operate at zero following the previous transition to operate at zero of another **BM Unit** at the same **Power Station**;

- Last Time to Cancel Synchronisation, expressed in minutes with an upper limit of 60 minutes, being the notification time required to cancel a **BM Unit's** transition from operation at zero. This parameter is only applicable where the transition arises either from a **Physical Notification** or, in the case where the **Physical Notification** is zero, a **Bid-Offer Acceptance.** There can be up to three Last Time to Cancel Synchronisation(s) each applicable for a range of values of Notice to Deviate from Zero.

Change required to Data Registration Code Schedule 2

Ref: Page DRC-24 Generation Planning Parameters; Synchronising Parameters

Delete: Reference to *Station **Synchronising** Intervals (SI) after 48 hour shutdown.*

Ref: Page DRC-25 Generation Planning Parameters; Synchronising Parameters

Delete: Reference to *De-Synchronising Intervals (Single value) OC2.4.2.1(a).*

Annex 2 - Proposed Additional Legal Text: Option 2 (ref 4.3.2)

This section contains the proposed legal text to give effect to the proposals under Option 2. The proposed new text is in red and is based on Grid Code Issue 4 Revision 13.

Change required to OC2.A.2

Delete: OC2.A.2.2 Synchronising Intervals

Delete: OC2.A.2.3 De-Synchronising Intervals

OC2 APPENDIX 2

OC2.A.2 **Generation Planning Parameters**

The following parameters are required in respect of each **Genset**.

OC2.A.2.1 Regime Unavailability

Where applicable the following information must be recorded for each **Genset**.

- Earliest synchronising time:
  Monday
  Tuesday to Friday
  Saturday to Sunday

- Latest de-synchronising time:
  Monday to Thursday
  Friday
  Saturday to Sunday

~~OC2.A.2.2 **Synchronising** Intervals~~

~~(a) The **Synchronising** interval between **Gensets** in a **Synchronising Group** assuming all **Gensets** have been **Shutdown** for 48 hours;~~

~~(b) The **Synchronising Group** within the **Power Station** to which each **Genset** should be allocated.~~

~~OC2.A.2.3 **De-Synchronising** Interval~~

~~A fixed value **De-Synchronising** interval between **Gensets** within a **Synchronising Group.**~~

OC2.A.2.4 **Synchronising Generation**

The amount of MW produced at the moment of **Synchronising** assuming the **Genset** has been **Shutdown** for 48 hours.

OC2.A.2.5 Minimum Non-zero time (MNZT)

The minimum period on-load between **Synchronising** and **De-Synchronising** assuming the **Genset** has been **Shutdown** for 48 hours.

OC2.A.2.6 Run-Up rates

A run-up characteristic consisting of up to three stages from **Synchronising Generation** to **Output Usable** with up to two intervening break points assuming the **Genset** has been **Shutdown** for 48 hours.

OC2.A.2.7 Run-down rates

A run down characteristic consisting of up to three stages from **Output Usable** to **De-Synchronising** with breakpoints at up to two intermediate load levels.

OC2.A.2.8 Notice to Deviate from Zero (NDZ)

The period of time normally required to **Synchronise** a **Genset** following instruction from **NGET** assuming the **Genset** has been **Shutdown** for 48 hours**.**

OC2.A.2.9 Minimum Zero time (MZT)

The minimum interval between **De-Synchronising** and **Synchronising** a **Genset.**

OC2.A.2.10 Two Shifting Limit

The maximum number of times that a **Genset** may **De-Synchronise** per **Operational Day**.

OC2.A.2.11 **Gas Turbine Units** loading parameters

- Loading rate for fast starting
- Loading rate for slow starting

Change required to BC1.4.1

Insert: Text ".. may be submitted by telephone or fax."

BC1.4.1 Communication with Users

(a) Submission of **BM Unit Data** and **Generating Unit Data** by **Users** to **NGET** 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~~ submitted by telephone or fax ~~following its initial submission by electronic data communication facilities~~.

Change required to BC1.4.2 (f) (v)

Delete: Text "(eg, **Synchronising** or **De-Synchronising** Intervals, the minimum notice required to cancel a **Synchronisation**, etc):" from BC1.4.2 (f) (v)

BC1.4.2 Day Ahead Submissions

(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 **NGET** (save in respect of item (vi) where the item shall be submitted only when reasonably required by **NGET**), 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 **NGET** 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.

(vii) in the case of a **Power Park Module**, a **Power Park Module Availability 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**.

Change required to BC1.A.1.5

Insert new definition for: Station Synchronising Interval

Insert new definition for: Station De-Synchronising Interval

Insert new definition for: Last Time to Cancel Synchronisation

BC1.A.1.5 Dynamic Parameters

- Station Synchronising Interval, expressed in minutes, being the minimum time that must be allowed to elapse between **BM Units** at a **Power Station** transitioning from operation at zero;

- Station De-Synchronising Interval, expressed in minutes, being the minimum time that must be allowed to elapse between **BM Units** at a **Power Station** transitioning to operate at zero;

- Last Time to Cancel Synchronisation, expressed in minutes with an upper limit of 60 minutes, being the notification time required to cancel a **BM Unit's** transition from operation at zero. This parameter is only applicable where the transition arises either from a **Physical Notification** or, in the case where the **Physical Notification** is zero, a **Bid-Offer Acceptance.** There can be up to three Last Time to Cancel Synchronisation(s) each applicable for a range of values of Notice to Deviate from Zero.

Change required to Data Registration Code Schedule 2

Ref: Page DRC-24 Generation Planning Parameters; Synchronising Parameters

Delete: Reference to *Station **Synchronising** Intervals (SI) after 48 hour shutdown.*

Ref: Page DRC-25 Generation Planning Parameters; Synchronising Parameters

Delete: Reference to *De-Synchronising Intervals (Single value) OC2.4.2.1(a).*

Change required to BC1.A.1.5

Delete existing definition for:	Station Synchronising Interval
Delete existing definition for:	Station De-Synchronising Interval
Insert new definition for:	Synchronising Interval
Insert new definition for:	De-Synchronising Interval

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 **National Electricity 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 **National Electricity Transmission System**;

- Maximum Delivery Volume (MDV), expressed in MWh, being the maximum number of MWh 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;

- ~~Station Synchronising Interval, expressed in minutes, being the minimum elapsed time that must be allowed between **BM Units** at a **Power Station** transitioning from operation at zero;~~

- ~~Station De-Synchronising Interval, expressed in minutes, being the minimum elapsed time that must be allowed between **BM Units** at a **Power Station** transitioning to operate at zero;~~

- Synchronising Interval (SI), expressed in minutes, being the minimum time that must elapse before a **BM Unit** at a **Power Station** may transition from operation at zero following the previous transition from operation at zero of another **BM Unit** at the same **Power Station**;

- De-Synchronising Interval (DSI), expressed in minutes, being the minimum time that must elapse before a **BM Unit** at a **Power Station** may transition to operate at zero following the previous transition to operate at zero of another **BM Unit** at the same **Power Station**;

- Last Time to Cancel Synchronisation (LTCS), expressed in minutes with an upper limit of 60 minutes, being the notification time required to cancel a **BM Unit's** transition from operation at zero. This parameter is only applicable where the transition arises either from a **Physical Notification** or, in the case where the **Physical Notification** is zero, a **Bid-Offer Acceptance.** There can be up to three Last Time to Cancel Synchronisation(s) submitted at any one time, each applicable for a range of values of Notice to Deviate from Zero.