

Stage 01: Workgroup Report

Grid Code

B/12 Formalising Two Shifting Limit and other parameters

What stage is this document at?

01	Workgroup Report
02	Industry Consultation
03	Report to the Authority

This report contains the findings of the Electricity Balancing System Group which was tasked to consult on whether to formalise the Two Shifting Limit, Station Synchronising Interval, Station Desynchronising Interval, and Last Time to Cancel Synchronisation parameters.

This document contains the findings of the consultation undertaken by the Electricity Balancing System Group.

Published on: 09 July 2012



The Electricity Balancing System Group recommends:

that Two Shifting Limits are not formalised, but that Station Synchronising Interval, Station Desynchronising Interval and Last Time to Cancel Synchronisation are.



High Impact:

Generators, National Grid



Medium Impact:

None



Low Impact:

None

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Any Questions?

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About this document

This document is a Workgroup Report which contains the discussions and recommendations of the Electricity Balancing System Group that was tasked to consider the options for data submissions presented by the new Electricity Balancing System and also to consider an issue originally raised by Eggborough Power Limited regarding National Grid's interpretation and use of the Two Shifting Limit parameter.

This report outlines the background to the issues, the impacts they may have on the industry, and recommendations for the Grid Code Review Panel to consider. The conclusions may include the drafting of Industry Consultations in order to modify the Grid Code, for consideration by the Grid Code Review Panel.

Document Control

Version	Date	Author	Change Reference
0.1	28 June 2012	National Grid / EBSG	Draft Workgroup Report
1.0	06 July 2012	National Grid / EBSG	Workgroup Report

B/12 Workgroup Report

09 July 2012

Version 1.0

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1 Executive Summary

- 1.1 The initiating event for undertaking a consultation can be traced back to the Grid Code Review Panel (GCRP) meeting held on 18th November 2010 when Eggborough Power Limited (EPL) presented an item on National Grid's interpretation and use of the Two Shifting Limit parameter. Subsequently, the EBSG working group was charged with addressing the Two Shifting Limit parameter and following further discussion, the group recommended that wider industry views were sought through an industry consultation. The opportunity was also taken to consult on other items of Other Relevant Data; Station Synchronisation Interval (SSI), Station De-Synchronisation Interval (SDI), and Last Time to Cancel Synchronisation (LTCS). The purpose of the consultation was therefore to seek industry views on formalising these various items of Other Relevant Data.
- 1.2 A consultation document was published on 29 March 2012 requesting industry views on whether the TSL, and other parameters, should be formalised within the Grid Code and for supporting reasons. Nine industry responses were received to the three primary questions, asking whether TSL, SSI/SDI, and LTCS parameters should be formalised, as well as the remaining supporting questions. The responses were discussed at the EBSG meeting on 1st May 2012 and were presented to the GCRP on 16th May 2012.
- 1.3 The GCRP was concerned that the issues faced by some smaller generators may not have been addressed and proposed that the GCRP members should further consider the TSL issue outside of the EBSG. It was acknowledged that the next step for the EBSG was to produce a workgroup report on the outcome of the consultation process.
- 1.4 This workgroup report summarises the consultation responses and, based on the consultation responses and EBSG discussions, makes the following recommendations.
 - 1.4.1 Two Shifting Limit is not formalised as a dynamic parameter under the Grid Code Balancing Codes.
 - 1.4.2 SSI and SDI parameters are formalised as Balancing Code dynamic parameters on a per BMU basis with an upper limit of 999 minutes subject to the provisions of BC2.7.2(b).
 - 1.4.3 Last Time to Cancel Synchronisation is formalised as a dynamic parameter with an upper limit of 60 minutes within the Grid Code Balancing Codes.
 - 1.4.4 That the workgroup proceeds to develop the Grid Code text to deliver recommendations 1.4.2 and 1.4.3 and to draft the associated Industry Consultation.

2 Purpose & Scope of the Consultation published 29th March 2012

- 2.1 The concept of Other Relevant Data was introduced with the New Electricity Trading Arrangements (NETA) in 2001 and is defined in BC1.4.2(f). The consultation covered a sub-set of Other Relevant Data which is defined in paragraph (v) of BC1.4.2(f) as “details of any other factors which National Grid may take account of when issuing Bid-Offer Acceptances (BOAs) for a BM Unit (e.g. Synchronising or De-Synchronising Intervals, the minimum notice required to cancel a Synchronisation, etc)” – the significant word in this definition being “**may**”. The concept of Other Relevant Data was introduced as part of an initiative to simplify the Dynamic Parameter set for NETA whose complexity was seen as being part of the problem with the Electricity Pool arrangements. Effectively, it covers those Electricity Pool parameters that were not adopted as formal Dynamic Parameters under NETA. The most common items of data submitted under this definition have included Two Shifting Limit (TSL), Station Synchronising Interval, Station De-Synchronising Interval, and ‘last time to cancel sync’¹.
- 2.2 The initiating event for this consultation can be traced back to the Grid Code Review Panel (GCRP) meeting held on 18th November 2010 when Eggborough Power Limited (EPL) presented an item on National Grid’s interpretation and use of the Two Shifting Limit parameter (minutes 1457 – 1459 inclusive refer).
- 2.3 On the 1st June 2011, an industry group comprising National Grid and members of the GCRP met to discuss and examine the issues surrounding the TSL within the Grid Code. As a result of these discussions, National Grid presented a paper to the 7th July 2011 GCRP (minutes 1871 – 1876 inclusive refer) and the following recommendations were approved:
- 2.3.1 That Generators should in the short term use the existing BM parameters of Minimum Zero Time (MZT) and/or Bid-Offer Prices to manage multiple Synchronisations and De-Synchronisations on any given day.
- 2.3.2 That the task, of whether a more robustly defined Two Shifting Limit parameter should be implemented within the Grid Code and the consideration of the necessary IS system changes to make this visible to the market, is added to the Terms of Reference for EBS, if it isn’t already.
- 2.3.3 That National Grid should create a Grid Code Associated Document on Two Shifting Limits, setting out a definitive position on the existing treatment of the Two Shifting Limit parameter. For the avoidance of doubt this will be that the parameter will not be used by National Grid, and that pending the outcome of the deliberations of the EBS group, Generators should not submit it under any assumption that it will be applied to Balancing Mechanism actions².
- 2.4 Following a direction by the GCRP, the TSL issue was debated at the Electricity Balancing System Working Group (EBSG). However, the EBSG was unable to agree a solution because of the differing views of its members. As a result, the EBSG recommended to the GCRP that wider

¹ Two Shifting Limiting is defined in the Glossary and Definitions, the Station Synchronising and De-Synchronising Intervals are referenced in OC2 Appendix 2 (OC2.A.2.2 and OC2.A.2.3) and ‘last time to cancel sync’ is referenced in BC1.4.2(f)(v).

² The Grid Code Associated Document ‘**Two Shifting Limit July 2011**’ can be found on <http://www.nationalgrid.com/uk/Electricity/Codes/gridcode/associateddocs/>

industry views should be sought via a written consultation. Following GCRP approval, EBSG carried out an industry consultation on the issue of TSL.

- 2.5 In addition to consulting on the TSL issue, EBSG took the opportunity to consult on formalising some other items of Other Relevant Data that are frequently used i.e. Station Synchronising Interval (SSI), Station De-Synchronising Interval (SDI), and 'last time to cancel sync'.

Terms of Reference

- 2.6 Minute 1873 of the GCRP meeting of 7th July 2011 notes that the issue of TSL had been included within the scope of the EBSG.
- 2.7 The general Terms of Reference for EBSG have been included as Annex 1.

3 Workgroup Discussions on the Consultation Responses

3.1 The industry consultation requested views on whether the TSL and other parameters should be formalised within the Grid Code. Nine respondents replied to the 14 questions asked.

3.2 Responses were received from:

Seabank Power Ltd

IBM (UK) Ltd on behalf of ScottishPower

Drax Power Ltd

SSE Generation Ltd

Eggborough Power Ltd

RWE Supply & Trading GmbH

E.ON UK plc

EDF Energy

Barking Power Ltd

3.3 The industry responses, collated for each consultation question, have been included as Annex 2. For completeness, the individual responses can be found in Annex 3. Summary responses to each question are given here.

TSL – Consultation questions and responses

3.4 This section covers specific questions relating to TSL.

Q1. Are you in favour of adopting a parameter similar to Two Shifting Limit as a Dynamic Parameter under paragraph BC2.5.3.1 of the Grid Code? Please tell us the reasons for your response.

Summary

Yes	No	Neutral/Other
3	5	1

3.4.1 Responses in favour of adopting a TSL-type parameter agreed that it was beneficial for generators to indicate plant limitations to National Grid and the use of TSL was a good method to do so. TSL would also be easier for smaller generators with limited resources to signal their desired operating regime to the System Operator.

3.4.2 Responses against adopting a TSL-type parameter suggested that TSL is unnecessary as it would reduce transparency on the actions taken by the System Operator, generators are able to signal their availability to Two Shift using existing dynamic data, and it could artificially restrict the System Operator in near or real time to meet a parameter that extends “beyond the wall”, so having a detrimental impact on economic and efficient operation of, and competition within, the Balancing Mechanism.

Q2. Do you have any views on whether, if adopted, Two Shifting Limit should limit transitions **from** zero (Synchronisations) or transitions **to** zero (De-Synchronisations)? Please tell us the reasons for your response.

Summary

From Zero	To Zero	Neutral/Other
5	3	1

3.4.3 The majority view was in favour of limiting transitions from zero because issues regarding limiting factors relate to unit start-up and not de-synchronisation, this also being the point at which costs are incurred.

3.4.4 Those supporting the view of limiting transitions to zero suggested this approach is better for plant life whilst also allowing the plant to be available to run, albeit at a higher cost.

Q3. If Two Shifting Limit was adopted, do you have any views on the timescales over which it should apply e.g. Operational Day, week, year etc? Please tell us the reasons for your response.

Summary

Operational Day <24 Hours	Longer Term >24 Hours	Neutral/Other
6	1	2

3.4.5 The majority view was to limit TSL to within the Operational Day as this is consistent with current arrangements. Beyond the Operational Day, it would be difficult to manage the parameter economically and practically.

3.4.6 The view supporting longer term application of TSL suggested that this could be viewed as standing data and as such, could be updated as required.

Q4. If adopted, should Two Shifting Limit apply to only those transitions to/from zero that result from Bid-Offer Acceptances, or to all transitions to/from zero i.e. including those as a result of submitted Physical Notifications and Maximum Import and Export Limits? Please tell us the reasons for your response.

Summary

BOA Transitions	All Transitions	Neutral/Other
2	5	2

3.4.7 The majority view preferred to limit all transitions to/from zero in order to manage the costs and risks arising from starts and to simplify commercial and operational planning by Power Stations.

3.4.8 The views supporting just BOA transitions considered that adopting an “all transition” approach would be inefficient and create unacceptable risks and costs for other BM participants.

Q5. In the interim period (prior to any formal Code changes), should National Grid take into account the Two Shift Limit when issuing Bid-Offer Acceptances? Please tell us the reason for your response.

Summary

Yes	No	Neutral/Other
3	3	3

3.4.9 Views for and against National Grid taking TSL into account when issuing BOAs restated the comments made to the previous questions. If TSL was to be formalised, it should be taken into account with immediate effect whereas, if it was not formalised, there should be no interim period and therefore no need to take it into account.

3.5 The workgroup considered the responses to all the questions on TSL, with discussions being summarised into views for and against formalising the TSL.

Views in favour of formalising the Two Shifting Limit parameter

3.6 Those in favour of formalising TSL were concerned about the risk and costs to smaller generators with limited operational staff if TSL was not formalised. It would require them to actively manage BM data and would expose them to possible penalties if unable to deliver on SO instructions. Formalising the parameter would however allow them to signal their desired operating regime to the SO although some said that a TSL would limit a generator from revising its position in response to changes in the market.

3.7 Concern was raised that the use of high offer prices to signal a desire not to run also runs the risk of regulatory investigations. There was also concern regarding rising prices as a result of increased starts bringing outages forward reducing the plant available to meet customer demand..

Views against formalising the Two Shifting Limit parameter

3.8 Those against formalising TSL raised the following concerns:

3.8.1 Plant that would attract high cost to shut down and start up should be able to price itself appropriately in the BM.

3.8.2 It would foreclose the BM to other participants, potentially increase BSUoS costs, and reduce transparency.

3.8.3 That the use of the dynamic parameters MNZT and MZT to manage unit operation is well established and that there is no need for change at this time.

National Grid Comment:

3.9 TSL, in the existing and proposed definitions, is not a real technical parameter – there is no rationale for a unit suddenly becoming capable of starting up or shutting down at the start of an Operational Day i.e. 05:00 hours, where it was unable to one minute before.

3.10 National Grid is sympathetic to the issues that Generators have in managing the number of starts between multi-year maintenance outages. However, converting this multi-year limit into a daily limit constrains the utilisation to the average. In practice the unconstrained utilisation would vary with a number of factors e.g. weather (for both customer demand and renewable generation), plant margin etc. It may be low for a period, high for another period and moderate for another. Having a daily limit would constrain the periods of high utilisation, even though the average utilisation was acceptable.

3.11 A TSL parameter would also lock National Grid into unit commitment decisions for up to a day, even though forecasts of renewable generation output would continue to be revised throughout the day and market participants would re-schedule and re-price their units during the day. Such a situation would make it difficult to ensure secure, economic and efficient operation. It may have been acceptable to have a TSL under the Pool Arrangements, when key data was fixed a day in advance for the whole Operational Day, but not under NETA with a Balancing Mechanism window of one hour and significant volumes of renewable generation.

Workgroup Conclusion:

3.12 A majority of respondents did not support formalising a Two Shifting Limit parameter within the Grid Code because Generators are able to signal their availability to two shift using existing dynamic parameters. Some respondents also suggested that such a parameter would reduce transparency, and that there would be a subsequent impact on cost and competition within the Balancing Mechanism.

SSI and SDI – Consultation questions and responses

3.13 The specific questions relating to SSI and SDI are given here:

Q6. Are you in favour of formalising the Station Synchronising Interval and Station De-Synchronising Interval parameters under paragraph BC2.5.3.1 of the Grid Code? Please tell us the reasons for your response.

Summary

Yes	No	Neutral/Other
8	1	0

3.13.1 The majority of respondents were clear that formalising the SSI and SDI parameters is important for plant management. They represent physical constraints on a Power Station for which there is no alternate form of Grid Code submission to achieve the required outcome. Formalisation would ensure that National Grid is aware of the limitation of Power Stations whilst preventing confusion over whether the parameters are being taken into consideration.

3.13.2 The minority view against SSI/SDI formalisation suggested that these parameters assume that all units in a station are all the same and that a single value can be applied across all units which, in practice, cannot happen.

Q7. Do you have any comments on the proposed definitions for Station Synchronising Interval and Station De-Synchronising Interval as stated in sections 4.2.1 and 4.2.2 of this consultation?

Summary

Additional Comment	Nothing Further To Add
6	3

3.13.3 Additional comments addressed clarity of definitions, the use of terminology, and consideration towards applying the limits across different configurations of BMUs even though this could raise additional complexity for some generators.

Q8. Do you have any views on whether there should be an upper limit on the values of Station Synchronising Interval and Station De-Synchronising Interval and what that upper limit should be?

Summary

Upper Limit	No Upper Limit	Neutral/Other
4	2	3

3.13.4 The majority views in favour of an upper limit proposed keeping the limit in line with current Balancing Mechanism Window timings with a number of respondents suggesting a period between 60 and 90 minutes.

3.13.5 Those in favour of no upper limit suggested that limits need to be a genuine estimate of the intervals required for a unit, and not an artificial limit that was commercially based and technically unrealistic.

3.14 The workgroup considered the responses to all the questions on SSI and SDI, with discussions being summarised into arguments for and against formalising the parameters.

SSI and SDI - Views for formalising SSI and SDI parameters

3.15 Formalising and reporting these parameters and requiring National Grid to adhere to them when issuing instructions would avoid confusion and accurately reflect the limitation of the Power Station, providing transparency to the market.

SSI and SDI - Views against formalising SSI and SDI parameters

3.16 It was suggested that unit start-up intervals can be very complex and do not lend themselves to a formal submission. This concerns the variety of start-up combinations that can occur and which could result in a number of intervals being proposed according to the combination.

National Grid Comment:

3.17 National Grid routinely complies with the SSI and SDI parameters submitted as Other Relevant Data and expects to continue to do so. Formalising these parameters would provide certainty to Generators and National Grid as to the circumstances in which these parameters would be complied with. It would define the data that can be submitted, which would support its use in optimisation algorithms to make non-discriminatory unit commitment decisions and would also allow this data to be published as market information.

Workgroup Discussion

3.18 As SSI and SDI parameters were currently complied with, respondents 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 if applied at either the station or BMU level.

3.19 At subsequent meetings of EBSG, the workgroup sought to discuss these issues further but it was felt that most of the workgroup's discussions had been regarding Two Shifting Limits, and the subject of upper limits had not been discussed fully.

3.20 In subsequent discussions it was acknowledged that restricting the value of the parameter to be within the Balancing Mechanism Window would not contain its impact within the window, as after synchronisation BM Units may take hours to run up to their Stable Export Limit. Also some stations have technical parameters that under certain circumstances would exceed the extent of the Balancing Mechanism Window and 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.

3.21 EBSG also gave consideration to whether such intervals should be on a per BM Unit basis, rather than a station basis. This would address the situation

where the intervals are different for different units in a station e.g. because of their thermal state or environmental reasons and would mean they could be reported on the BMRA against a BM Unit. As the BMRA does not currently have stations as an entity, EBSG concluded that the values should apply to BMU level, not station level.

3.22 EBSG also concluded that upper limits should not apply to the SSI and SDI parameters. This was predominantly due to considering that putting an upper limit on synchronisation intervals would not be containing actions within the BM window.

Workgroup Conclusion:

3.23 The workgroup concluded that SSI and SDI should be formalised and that there should be no upper limits on these parameters (except for IT system interface definition purposes), but will be subject to the provisions of BC2.7.2(b) regarding operation beyond the Balancing Mechanism Window.

3.24 The workgroup further concluded that the SSI and SDI values should correspond to individual BMUs at the station rather than a single value for each parameter at the station.

LTCS – Consultation questions and responses

3.25 The specific questions relating to LTCS are given here:

Q9. Are you in favour of formalising the Last Time to Cancel Sync parameter under paragraph BC2.5.3.1 of the Grid Code? Please tell us the reasons behind your response.

Summary

Yes	No	Neutral/Other
8	1	0

3.25.1 Majority views replicated the answers given to similar questions for SSI/SDI parameters i.e. formalisation of the parameter would prevent confusion over whether this data submission was being taken into account and that a formal parameter would ensure adherence by the System Operator. They represent physical constraints on a Power Station for which there is no alternate form of Grid Code submission to achieve the required outcome.

3.25.2 The view against suggested that communication between the Control Room and the operational trading desks would better support the requirement rather than a formal parameter.

Q10. Do you have any comments on the proposed definition for Last Time to Cancel Sync as stated in section 5.5 of this consultation?

Summary

Additional Comment	Nothing Further To Add
3	6

3.25.3 The majority of respondents had no further comments to add. Those that did suggested changes to the definition and to ensure applicability to all types of generation.

Q11. Do you have any views on whether there should be an upper limit on the value of Last Time to Cancel Sync and what that upper limit should be?

Summary

Upper Limit	No Upper Limit	Neutral/Other
8	1	0

3.25.4 In line with responses to Question 8, the majority views in favour of an upper limit proposed keeping the limit in line with current Balancing Mechanism Window timings, with a number of respondents suggesting a period between 60 and 90 minutes.

3.25.5 The respondent in favour of no upper limit suggested that this was because different types of unit will have different operating characteristics that would not easily allow the use of an upper limit

Q12. Do you think that the Last Time to Cancel Sync parameter should be used to manage the notice required to re-synchronise a BM Unit which has a non-zero PN, but has been issued Bid-Offer Acceptances to keep it off? Please tell us the reasons for your answer and any alternative approaches that occur to you.

Summary

Yes	No	Neutral/Other
4	2	3

3.25.6 The majority responses suggested this was in line with current informal practice and was a sensible approach.

3.25.7 Those taking the neutral position suggested alternative approaches that would be consistent with NDZ.

3.25.8 Those against the proposal suggested that NDZ should be the parameter used to manage the re-synchronisation notice because regardless of why the unit is off, it will still require the submitted NDZ value to resynchronise.

Workgroup Conclusion:

3.26 Subsequent to the workgroup discussions around the SSI and SDI parameters and the conclusions thereof, the workgroup also concluded that last time to cancel synchronisation data should be formalised into a Last Time to Cancel Synchronisation parameter.

3.27 The workgroup was in agreement with the majority of the consultation responses that there should be an upper limit on LTCS. The workgroup view was that this should be a maximum of 60 minutes to allow a transition from zero (synchronisation) at any point in the final half-hour of the Balancing Mechanism Window to be cancelled.

Additional Consultation questions

3.28 The Consultation took the opportunity to ask the following general questions regarding parameters:

Q13. Are there any other parameters that should be formalised in addition to those already covered by this consultation? Please tell us the reason for your response.

Summary

Yes	No	Neutral/Other
2	5	2

3.28.1 One comment suggested introducing a parameter which reflects the NDZ profile of a Gen Set after shutdown to give the System Operator clearer visibility of the hot, warm or cold NDZ.

3.28.2 Another comment suggested giving consideration to modelling hold points in run-up and run-down rates, either directly or with additional ramp rate segments.

3.28.3 The majority of respondents did not identify, or wish to make, additional comment.

National Grid Comment:

3.29 The replacement system (EBS) will have the capability to support time-varying dynamic parameters that, in due course, should allow market participants to model the variation in NDZ and other parameters with units changing thermal state.

3.30 EBS will also, via the new industry interfaces, allow market participants to submit up to 10 run up and run down rates. Also the minimum ramp rate will be reduced from 0.2MW/min to 0.02MW/min which should assist in modelling hold points.

Q14. Are there any other comments you would like to make?

Summary

Yes	No
4	5

3.31 Additional comments were given by a number of respondents and considered as part of the workgroup discussion.

3.31.1 One respondent asked what the hierarchy of the logic is for decision making on parameters used to issue BOA's e.g. existing dynamic parameters and if parameters such as 'Last Time to Cancel Sync' are introduced?

3.31.2 Another respondent expressed the view that if these parameters become firm as suggested by the proposers, they should be visible to market participants.

National Grid Comment:

3.32 On the question of hierarchy of logic then if a unit that is due to synchronise has a Notice to Bid (NTB) of 2 minutes, but a LTCS of 45 minutes, then if National Grid wants to delay or cancel the synchronisation, then the most constraining parameter would apply i.e. the 45 minute LTCS.

3.33 In terms of making any new formalised parameters visible to market participants, National Grid is working with Elexon regarding the arrangements for publishing any formalised parameters on bmreports.com.

4 Impact & Assessment

Impact on the Grid Code

- 4.1 If the recommendations in this report were to be implemented, there would need to be amendments to various parts of the Grid Code including: Inserting details of SSI, SDI, and LTCS as Dynamic Parameters under BC1.A.1.5.
- 4.2 The text required to give effect to the proposal is not provided at this stage.

Impact on National Electricity Transmission System (NETS)

- 4.3 The recommendations, whether adopted or rejected, will provide greater clarity and certainty around the treatment of the parameters concerned, ultimately preventing disputes arising between the parties.

Impact on Grid Code Users

- 4.4 These recommendations 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

- 4.5 These recommendations are unlikely to have any impact on Greenhouse Gas emissions.

Assessment against Grid Code Objectives

- 4.6 National Grid considers that these recommendations would better facilitate the Grid Code 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);

Clarification of the use of these dynamic parameters within the Grid Code will provide greater transparency to all parties and as such, supports this Objective.

- 4.7 National Grid considers that these recommendations would have a neutral impact on the following Grid Code objectives:

- (i) to permit the development, maintenance and operation of an efficient, coordinated and economical system for the transmission of electricity;
- (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
- (iv) to efficiently discharge the obligations imposed upon the licensee by this license and to comply with the Electricity Regulation and any relevant legally binding decisions of the European Commission and/or the Agency.

Impact on core industry documents

4.8 These recommendations do not impact on any other core industry documents.

Impact on other industry documents

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

5 Workgroup Recommendations

The workgroup requests that the GCRP endorses the following recommendations:

- 5.1 Two Shifting Limit is not formalised as a dynamic parameter under the Grid Code Balancing Codes.
- 5.2 SSI and SDI parameters are formalised as Balancing Code dynamic parameters on a per BMU basis with an upper limit of 999 minutes subject to the provisions of BC2.7.2(b).
- 5.3 Last Time to Cancel Synchronisation is formalised as a dynamic parameter with an upper limit of 60 minutes within the Grid Code Balancing Codes.
- 5.4 Subject to GCRP approval of the above recommendations, the workgroup proceeds to develop the Grid Code text to deliver recommendations 5.2 and 5.3 and to draft the associated Industry Consultation.

National Grid Electricity Transmission Electricity Balancing System Group (EBSG) Terms of Reference

Governance

1. The EBSG is established by Grid Code Review Panel (GCRP).
2. The group shall formally report to the GCRP.

Membership

3. The EBSG shall comprise a suitable and appropriate cross-section of experience and expertise from across the industry, which shall include:
 - National Grid
 - ELEXON
 - Grid Code Users and BSC Parties (by open invitation through ELEXON)
 - Ofgem

Meeting Administration

4. The frequency of EBSG meetings shall be defined as necessary by the EBSG chair to meet the scope and objectives of the work being undertaken at that time.
5. National Grid will provide technical secretary resource to the EBSG and handle administrative arrangements such as venue, agenda and minutes.
6. The EBSG will have a dedicated section under the Grid Code part of National Grid's website. A link to this section will be provided on the web page 'EBS (BM Replacement) Project'³. This will enable EBSG information such as minutes and presentations to be available to a wider audience.

Scope

7. The scope of this group is limited to that of the Electricity Balancing System, and the Balancing Mechanism and Ancillary Services data and instructions that it will support.
8. The group will consider the changes requested by the industry in response to National Grid's consultations and also any changes that are offered as part of the standard vendor system. It will draft any Grid Code modifications and supporting documents required to implement these changes. ELEXON will assist the group in highlighting any BSC implications, keep the BSC Panel updated on the group's work and conclusions, advise on the best BSC Governance route for progressing any consequential changes (e.g. as a Standing Issue or Modification Proposal), and assist in drafting any BSC proposals.

³ The EBS (BM Replacement) Project web page can accessed via
<http://www.nationalgrid.com/uk/Electricity/Balancing/EBS/>

9. Any other changes raised shall not normally fall within the scope of this group but could be considered for delivery after system go-live.
10. The scope of the group shall not include co-ordination of communications to the wider industry relating to EBS (e.g. industry testing, transition and go-live arrangements and timescales); however, National Grid may request members of the EBSG to provide contact details of other personnel in their respective organisations who may, for example, be involved in IT system testing.

Deliverables

11. The Group will provide updates and any reports to the Grid Code Review Panel which will:
 - Detail the findings of the Group;
 - Draft, prioritise and recommend changes to the Grid Code and associated documents in order to implement the findings of the Group; and
 - Highlight any consequential BSC changes which are or may be required, so that these can be progressed under BSC governance.

Timescales

12. It is anticipated that this Group shall be stood down after EBS go-live (currently Q3 2013). There will be timescales for the various activities within the scope of this Group, but it will only be possible to determine these after consideration of the specific activity or change.

Annex 2 – Consultation Responses – Collated for each Consultation Question

Responses were received from:

Seabank Power Ltd
 IBM (UK) Ltd on behalf of ScottishPower
 Drax Power Ltd
 SSE Generation Ltd
 Eggborough Power Ltd
 RWE Supply & Trading GmbH
 E.ON UK plc
 EDF Energy
 Barking Power Ltd

Industry Responses: Two Shifting Limit

Q1. Are you in favour of adopting a parameter similar to Two Shifting Limit as a Dynamic Parameter under paragraph BC2.5.3.1 of the Grid Code? Please tell us the reasons for your response.

Summary

A	B	C
Yes	No	Neutral/Other
3	5	1

Respondent	Summary Indicator	Response
Seabank Power	A	Yes, a TSL would allow the BM Participant to indicate to National Grid the availability of the BMU to be able to desynchronise (or synchronise).
IBM (UK) Ltd. (for and on behalf of ScottishPower)	A	We are in favour of adopting the Two Shifting Limit as a Dynamic Parameter. Generators need some method of indicating to NGT that there are plant limitations and the TSL is one of these. These may be due to safety issues or the risk of significant plant damage. Making the TSL a formal parameter would give NGT clearer information on plant abilities and will also remove potential BM price distortion and manipulation of MEL values.

Respondent	Summary Indicator	Response
Drax Power	B	<p>We do not believe a Two Shifting Limit parameter is necessary. This parameter is not necessary because generators are able to signal their availability to Two Shift using existing dynamic data, such as price and volume data in the Balancing Mechanism (BM).</p>
SSE Generation	B	<p>No. We are not in favour of adopting a parameter similar to Two shifting Limit as a Dynamic Parameter under BC2.5.3.1.</p> <p>We believe that introducing a formal parameter, limiting the starts or stops of a Gen Set or Power Park Module (PPM) to the System Operator would reduce the transparency on the actions taken by the System Operator and increase the complexity of the BM. This would be detrimental to competition in both generation and supply of electricity. We also believe that it would be very difficult to define a parameter which could be applied to all generation technologies equally and in a non discriminatory manner.</p>
Eggborough Power	A	<p>Yes.</p> <p>Making the TSL a formal parameter will make it easier for smaller players, with limited resources to signal their desired operating regime to the SO. It has been pointed out in discussions around this issue that some players use the existing BM parameters to signal a desired TSL. A formal TSL will therefore simply allow generators without larger 24 hour operations teams to signal the TSL without persistently altering their BM parameters, with the associated risks of human error.</p> <p>In practical terms the current arrangements mean; Units offer power into the Balancing Mechanism (BM) at a price with its technical parameters (a true reflection of how fast they can alter output, availability, etc.). If the plant is then called it can then give a longer notice to Minimum Zero Time. If the SO then instructs it off, it then has to give extremely high offer prices, set its Maximum Export Limit to zero or provide a longer Minimum Non-Zero Time. The effect is that the SO can lose plant margin during the day, as false availability signals are sent, or prices can become significantly higher, as plants use the BM data to signal operational issues to the SO.</p> <p>The reason prices rise is because many Units have limits on the number of starts between outages, for a mix of technical, safety and commercial reasons, making it more expensive to undertake numerous additional starts and pull outages forward. Again this can have a knock on effect on plant margin. Unless these Units are very careful not to get numerous starts, in a winter with significant peaking plant usage, those flexing Units will have to go on outages earlier than planned. If outages cannot be properly managed, as generators try to spread outages over the year, clumping of outages will push up not only balancing costs, but forward power prices will also increase.</p>

Respondent	Summary Indicator	Response
		<p>The ability to signal in advance to the SO the limited flexibility in the plants, their prices will be lower and the SO will have a clear idea of actual plant margin in any given day. This may mean they hold more plant part loaded in the middle of the day, but the overall cost will be lower. EPL would suggest that the increasing volumes of intermittent generation and the impact that has on the need for flexibility is going to require additional plant to be held on part loaded in any event. We disagree that the plant will foreclose the market to other parties, as there is nothing to stop the SO desynchronising this plant if it wants to, it will simply know that having done so it will not be available to restart.</p> <p>EPL does recognise that it is possible to use the Dynamic Data under the Balancing and Settlement Code (BSC) to signal to the SO its ability to operate within certain timescales. However, for a small company, with limited operational staff, the persistent altering of BM data, rather than being able to put in standing data, is onerous. It is also likely that human error could occur and the penalties on the generator if then issued with instructions it cannot deliver can be severe. By placing the Two Shifting Limits on a formal footing will reduce risks and costs for smaller players to the benefit of competition. New entrants would also find it easier to enter the market if managing the operational risks is made cheaper and easier.</p> <p>The use of high offer prices to signal a desire not to run also runs the risk of regulatory investigations, with associated costs, as well as reputational risk. With the proposed Transmission Constraint Licence condition, the risks of being called at a high price only to find you were behind a constraint increase the regulatory risks. It also does the industry as a whole no favours to have third parties (customers, journalists, MPs, etc.) be able to point at high offer prices without understanding these are being used as operational signals.</p> <p>EPL would therefore support the Grid Code being altered to add a new definition of physical parameters, against which BOAs will also be considered. We believe that following a change to the Grid Code that the BSC will also need to alter to include the Two Shifting Limits in the Dynamic Data Set as defined in BSC Section Q2.1.2.</p>
RWE	B	<p>RWE does not favour the adoption of a parameter similar to Two Shifting Limit for the reasons given in the consultation paper Chapter 3.5, i.e. foreclosing the BM to other participants, potentially increasing BSUoS costs and also reducing transparency.</p>
E.ON	B	<p>We do not support the Two Shifting Limit becoming a Dynamic Parameter in the Grid Code for the reasons given above. [<i>This cross-refers to summary narrative which is included below for completeness - NS</i>]</p>

Respondent	Summary Indicator	Response
		<p>To summarise our view,</p> <p>E.ON does not support the Two Shift Limit becoming a formal dynamic parameter used by National Electricity Transmission System Operator's (NETSO) when constructing Bid/Offer Acceptances.</p> <p>We agree with the arguments presented in the consultation paper against the proposal. In particular we are concerned about the detrimental impact this could have on the economic and efficient operation of and competition within the Balancing Mechanism. Obliging the NETSO to meet a parameter that extends beyond "the wall" is an artificial restriction on the NETSO in or near real time, which limits the ability of other competitors to be available at an economic price, or indeed for the generator with the TSL from revising its position in response to changes in the market. In our view the existing parameters of MZT and MNZT are already well established. These, along with the other dynamic parameters, have worked well since the introduction of NETA and we are not convinced that there is any need to change at this time.</p> <p>With regard to the Station Synchronising and De-Synchronising Intervals and Last Time to Cancel Sync parameters, as these are being used in practice by the NETSO when making its decisions it would seem sensible to formalise these parameters to provide additional certainty, providing suitable text can be agreed for inclusion within the Grid Code.</p>
EDF Energy	B	<p>No. Any generating unit is always capable of shutting down or of being isolated from the system. But shutting down; being unexpectedly unable to generate, and starting up again, involve costs, compared with simply operating or not operating or operating as the generator had expected. These costs vary considerably according to circumstances.</p> <p>Although we acknowledge some of the arguments set out to support the proposal, we are not persuaded that the benefits outweigh the potential risks and repercussions the change could create. Additionally, it is not clear what criteria NGET would use to shut down stations in times of excess generation, if sufficient numbers of generators have submitted values of TSL that prevent shutdown at those times.</p> <p>An obligation on NGET to take into consideration more complex dynamic parameters would represent a move from NETA back towards central despatch. It would transfer responsibility for optimising the operation of generating units over timescales of a day from a generator using its own forecasts and dynamically setting prices and parameters, to NGET using more complex parameters. While there may be some merits in this, the interaction of different dynamic parameters and prices could lead to inefficient outcomes as was suspected under the Pool. Under</p>

Respondent	Summary Indicator	Response
		<p>NETA, prices can be changed at any time, and the interaction between prices and complex dynamics could be more complex than under the Pool.</p> <p>Under central despatch, actions are managed by the system operator over longer periods than the balancing window, according to long term dynamic parameters and costs rather than short term prices.</p> <p>Theoretically, this can be efficient, but only to the extent the parameters are correct for the circumstances and self-consistent with other parameters, and that prices are cost-reflective taking into consideration those parameters. Any anomalies in or between dynamic parameters can lead to despatch inefficiencies and balancing prices that are less cost-reflective.</p> <p>If existing parameters are insufficient, a Grid Code / CUSC modification to create a "Two Shifting", "Startup" or "Shutdown" cost could be considered.</p>
Barking Power	C	No comment.

Q2. Do you have any views on whether, if adopted, Two Shifting Limit should limit transitions **from** zero (Synchronisations) or transitions **to** zero (De-Synchronisations)? Please tell us the reasons for your response.

Summary

A	B	C
From Zero	To Zero	Neutral/Other
5	3	1

Respondent	Summary Indicator	Response
Seabank Power	A	The TSL should limit transitions from zero, as this would limit the thermal stresses applied to the BMU by limiting the number of occasions the BMU starts; it would also enable the BM Participant, to better predict the running regime in the Operational Day.
IBM (UK) Ltd. (for and on behalf of ScottishPower)	A	The preferred option would be defined as the transition from zero (synchronisations) as the issues regarding limiting factors relate to unit start-up and not the de-synch (assuming that the MNZT parameter has been satisfied).
Drax Power	B	If adopted, we believe that the Two Shifting Limit should continue to limit transitions to zero (i.e. De-Synchronisation). Once a plant is Synchronised (from zero) and then De-Synchronised (to zero) within period, the unit would be unavailable to start up again. By limiting transitions to zero, the plant will still be available to run, although at a

Respondent	Summary Indicator	Response
		higher total cost.
SSE Generation	B	If adopted the parameter should limit the transitions to zero (stops, a PPM doesn't de-synchronise). Limiting the number of stops is, intrinsically, better for plant life as it reduces the risk of undue thermal and other stresses and shocks which can, over time, increase plant maintenance costs (and the need for more outages) and reduce plant life. Using stops allows the System Operator to despatch plant on when required and gives a measure of the flexibility of running plant.
Eggborough Power	A	EPL would like to see the TSL defined as a limit on transitions from zero (Synchronisations). This is because it is the starts that create more technical issues for plants than de-synchronisations.
RWE	A	If adopted, a Two Shifting Limit should only apply to a transition from zero arising from an Offer Acceptance. It should not apply to a transition from zero arising from a Bid Acceptance (i.e. the ending of a Bid Acceptance). We consider that the transition from zero may be more effectively managed by National Grid than a transition to zero, which may require a generating unit to continue operating to the detriment of other BM Participants. As such, it should not apply to a transition to zero arising from either a Bid Acceptance or Offer Acceptance.
E.ON	C	We have no view on this question as we do not support the proposal.
EDF Energy	B	If the proposal is adopted, TSL should limit transitions to zero, rather than from zero. This would be consistent with custom and practice and minimise the impact of the change.
Barking Power	A	Any limit should be applied to transitions from zero; this being the point at which costs are incurred.

Q3. If Two Shifting Limit was adopted, do you have any views on the timescales over which it should apply e.g. Operational Day, week, year etc? Please tell us the reasons for your response.

Summary

A	B	C
Operational Day <24 Hours	Longer Term >24 Hours	Neutral/Other
6	1	2

Respondent	Summary Indicator	Response
Seabank Power	A	The TSL should be applied over an Operational Day as per the current arrangements, this appears to work well and we cannot see a reason to lengthen this time.
IBM (UK) Ltd. (for and on behalf of ScottishPower)	B	This is pretty much standing data, and as such there seems little value in making it a requirement for this to be submitted on a daily basis. Longer term timescales would seem more appropriate, based on the assumption that any revisions can be submitted as required.
Drax Power	C	Drax does not have a preference on the timescales adopted, although we agree that the 05:00 to 05:00 operational day is a continuation of the practice applied in the previous Electricity Pool arrangements. However, if the parameter was to be adopted, it might be more sensible to treat it the same as other dynamic data i.e. on a rolling basis.
SSE Generation	A	The Start / Stop limit parameter should only apply over an Operational Day. Setting a timescale other than an Operational Day over which the Start / Stop limit would apply would be very complex and difficult for both the System Operator and stakeholders to manage economically and practically. It could also give rise to unintended consequences in terms of the knock on effect into the next Operational Day.
Eggborough Power	A	EPL believes that the TSL should work on a daily basis, fitting with the operational day 05:00 to 05:00, as we would interpret it now and as we believe it was interpreted in the past. We recognise that this is a somewhat arbitrary timeframe, but we the GB electricity market works on a daily basis and the parameters should be designed on the same operational day timeframe.
RWE	A	If adopted, a Two Shifting Limit should apply only within the Operational Day. It would be inefficient and unacceptable for National Grid to be expected to manage the operating regime of generating units beyond the Operational Day.
E.ON	C	The interaction between the time period that the TSL applies for and how this relates to the timeframe of Gate Closure window and the real time Balancing Period is one of the reasons that we do not support the proposal.
EDF Energy	A	If the proposal is adopted, the applicable timescale should be an Operational Day. This would be consistent with custom and practice and minimise the impact of the change.
Barking Power	A	The Two Shifting Limit should not be applied to any period over 24 hours otherwise it is too far departed from BM timescales.

Q4. If adopted, should Two Shifting Limit apply to only those transitions to/from zero that result from Bid-Offer Acceptances, or to all transitions to/from zero i.e. including those as a result of submitted Physical Notifications and Maximum Import and Export Limits? Please tell us the reasons for your response.

Summary

A	B	C
BOA Transitions	All Transitions	Neutral/Other
2	5	2

Respondent	Summary Indicator	Response
Seabank Power	C	As with other BM data, the TSL should apply to BMU's within the BM.
IBM (UK) Ltd. (for and on behalf of ScottishPower)	B	The TSL should apply to all planned starts due to both PNs and BOAs. However, should units trip and require to be resynchronised we would not expect these repeated attempts to re-synchronise to be counted.
Drax Power	B	We believe that the Two Shifting Limit should apply to all transitions. The reason a generator limits the number of Two Shifts is likely to be a technical and / or manpower issue. It is irrelevant as to how the Two Shift is triggered.
SSE Generation	A	The Start / Stop limit parameter should only apply to transactions to/from zero that result from Bid-Offer Acceptances. We believe the System Operator needs to know what flexibility is being made available (by the BSC Party) to them to determine operational strategy and potential reserve capacity within the Operational Day. Using the BOA arrangements is an appropriate way to proceed.
Eggborough Power	B	The TSL must apply to all starts so bids and offers need to take account of physical notifications that have already been submitted by the generator. For instance if a plant has a PN to start operating at 4pm, and the SO then synchronises the unit in the morning currently it must run it for its MNZT then take it off for its MZT. The unit would then have to resynchronise in the afternoon to run to its original planned PN would result in two starts. If PNs have already been submitted prior to NGC issuing a Bid Offer acceptance instruction then they need to be taken account of. EPL believes that if generators have technical reasons for wanting a TSL then they should need that for all starts in a day not just some. The use of the TSL should not make it more complicated for the SO to balance the system, which different numbers of starts in a day may do. If in any given day a plant

Respondent	Summary Indicator	Response
		wants to do additional starts it should reset its TSL.
RWE	A	If adopted, Two Shifting Limit should apply to transitions from zero as a result of Bid Acceptances only (also see answer to Q2). It would be inefficient and create unacceptable risks / costs for other BM participants if a Two Shifting Limit was to apply to transitions as a result of Bid- Offer Acceptances and also submitted PN and MEL data. We consider that the Generator is the most appropriate party to manage its PN and MEL data to ensure consistency with any Two Shifting Limit.
E.ON	C	We have no view on this question as we do not support the proposal.
EDF Energy	B	If the proposal is adopted, TSL should apply to all transitions to zero. This would simplify operational and commercial planning by power stations. All shutdowns would count towards the limit. The issue would remain of what should be done in circumstances when there is too much generation that cannot be shutdown, if this parameter were to be firm.
Barking Power	B	All transitions from zero should be taken into account. It is the cost and risk arising from all starts that needs to be managed.

Q5. In the interim period (prior to any formal Code changes), should National Grid take into account the Two Shift Limit when issuing Bid-Offer Acceptances? Please tell us the reason for your response.

Summary

A	B	C
Yes	No	Neutral/Other
3	3	3

Respondent	Summary Indicator	Response
Seabank Power	A	Yes, for the reasons stated in the previous 4 questions.
IBM (UK) Ltd. (for and on behalf of ScottishPower)	A	Yes, due to the aforementioned issues regarding ability of units to undertake multiple two shifts and also due to the possibility of BM price distortion and misleading MEL submissions.

Respondent	Summary Indicator	Response
Drax Power	C	It is our understanding that National Grid already takes this information into account when issuing Bid-Offer Acceptances. We believe that it would be perverse for generators to provide this information and for National Grid to then ignore it. NGC do not necessarily know why a Two Shifting Limit is declared on any particular unit, as such they cannot calculate the consequential effect of their actions. It could, for instance, lead to a loss of capacity or lead to a station exceeding emission limits.
SSE Generation	B	No. We believe that no formal Code change is required.
Eggborough Power	A	EPL wants to see a formalised TSL implemented as soon as possible. The changes should be implemented on a "work around" until a more robust, IT based solution can be found. EPL has also stated in its proposed Grid Code change, that the use of the TSL must be transparent and thus reported somewhere publicly. Again we feel that a work around can be put in place to put TSL onto say the SO web-site as an interim solution until a more formalised approach is established.
RWE	B	We do not support the application of Two Shifting Limit for the reasons given in answer to Q1. We are satisfied that the Grid Code provides alternative means to enable the Generator to achieve an effective Two Shifting Limit without intruding a specific parameter within the BM.
E.ON	B	We do not think the NETSO should take in to account the TSL any more that it is currently required to under the Grid Code as Other Relevant Data. We note the explanatory note produced by National Grid in July 2011 clarifying the use of the TSL. Given the confusion of its application it may be more appropriate to remove it entirely from the Grid Code.
EDF Energy	C	NGET should only take into account Two Shifting Limit to the extent that they do currently, as a parameter used for guidance, where economic balancing permits. If a plant has a high cost for performing a Two Shift, it should be capable of pricing itself appropriately in the Balancing Mechanism.
Barking Power	C	No opinion. However, if taken into account, submitted information must be made public for all BMUs to enable effective competition in the Balancing Mechanism.

Industry Responses: Station Synchronising and De-Synchronising Intervals

Q6. Are you in favour of formalising the Station Synchronising Interval and Station De-Synchronising Interval parameters under paragraph BC2.5.3.1 of the Grid Code? Please tell us the reasons for your response.

Summary

A	B	C
Yes	No	Neutral/Other
8	1	0

Respondent	Summary Indicator	Response
Seabank Power	A	Yes, any parameters that are used with the BM, should be formalised and adhered too. If (as present) they 'may' be taken into account, this could cause confusion if this is only applied to some BM Participants (and indeed BMU's).
IBM (UK) Ltd. (for and on behalf of ScottishPower)	B	<p>We do not believe that these should be formal parameters.</p> <p>Unit start-up intervals can be very complex and do not lend themselves to a formal submission. The fundamental problem with these parameters is that there is an assumption that all units in a station are the same and a single value can be applied between all Units.</p> <p>For example in some stations towns water requirements can set limits between Units, but even that does not set a fixed time between units as the station layout can require the starting interval between Units 1 & 2 to be 1 to 3 hours, whereas between Units 1 & 3 it is 30 to 90 minutes.</p> <p>Another example is that depending upon how warm the Units are changes the SSI, which again adds to the complexity.</p> <p>In conclusion, we believe that the current method of indicating synch intervals, together with communication between control rooms and the operational trading desk is the better option.</p>
Drax Power	A	Drax believes that the parameters should be formalised. We note that National Grid routinely complies with these parameters, which suggests that these parameters can be technically achieved.

Respondent	Summary Indicator	Response
SSE Generation	A	<p>Yes. We are in favour of formalising Station Synchronising and De-Synchronising Interval parameters.</p> <p>They are important parameters for managing technical restrictions within a power station, for example, the duty required on auxiliary transformers and auxiliary systems during the run up and run down sequence before Synchronising and De-Synchronising needs to be managed to avoid overloading of these during sequential starting or stopping. They are also important for environmental reasons to ensure compliance (by the power station) with emissions, including noise consent conditions during Synchronising and De-Synchronising or Stopping of a PPM. In addition the impact on hydraulic conditions upstream and downstream of a hydro power station needs to be managed for the safety of other river users.</p>
Eggborough Power	A	<p>Yes we fully support both parameters being placed on a formal footing under the Grid Code. It was our understanding that the SSI and SDI were intervals that were to be adhered to when issuing BOAi, and were surprised to find these were not formal parameters. We believe that many generators share our views that by giving these parameters to the SO they should be adhered to when plant is despatched and not to have some parameter that it is "optional" for the SO to adhere to them. This leads to confusion and suboptimal operation of the generator and the system as a whole.</p> <p>There are technical issues that prevent stations desynchronising or synchronising units at the same time. Within gate closure if a unit has a PN, and the SO choose to issue a BOAi at the same time for another unit or change the synch or desynch time to conflict with another unit, then this is technically not something every station can do and therefore will result in an imbalance and commercial cost to the generator. If an instruction was issued, in general the station will reject the instruction. It is also an issue for desynchronising, i.e. a unit has a PN in, and the SO alters the desynchronisation time of another unit to coincide with the instruction then the generator has two issues: potential breach of the Grid Code as they may be generating away from their PN; and the cost of imbalance. Within the gate closure period, the generator cannot alter its PNs to take account of any changes that the SO may take which will result in imbalance charges for the generator.</p>
RWE	A	<p>We favour the formalising of Station Synchronising Interval and Station De-Synchronising Interval parameters since they represent physical constraints on a Power Station for which there is no alternative form of Grid Code submission to achieve the required outcome.</p>

Respondent	Summary Indicator	Response
E.ON	A	Yes, providing suitable text can be agreed for inclusion within the Grid Code. As National Grid works to these parameters in practice it seems sensible to formalise them to remove any uncertainty that might be created in classifying them as Other Relevant Data.
EDF Energy	A	<p>Yes. From an operational perspective, the parameters allow stations to inform NGET of the required interval between starts/shut-downs of successive individual generating units within a power station. Given that NGET routinely complies with these parameters submitted as Other Relevant Data and expects to continue doing so, formalising these parameters would provide certainty to all parties concerned.</p> <p>We would expect NGET to investigate submission of parameters which appeared to be technically unrealistic or to be set on a purely commercial basis, given the impact on balancing and imbalance costs and prices.</p> <p>There is more justification for formalising the parameters for synchronisation, because the technical limitations on synchronising/starting are probably more rigid than those on de-synchronising.</p>
Barking Power	A	Yes. Available manpower is a major factor in dictating the amount of time that is required between BMU starts, along with possible additional technical constraints.

Q7. Do you have any comments on the proposed definitions for Station Synchronising Interval and Station De-Synchronising Interval as stated in sections 4.2.1 and 4.2.2 of this consultation?

Summary

A	B
Additional Comment	Nothing Further To Add
6	3

Respondent	Summary Indicator	Response
Seabank Power	A	Yes, SSI's and SDI's need to vary depending on which BMU synchronises (or desynchronises) first, some BM Participants have BMU's of varying configurations (1+1 CCGT, 2+1 CCGT etc) and using one value of SSI and SDI will not reflect the flexibility of these configurations.
IBM (UK) Ltd. (for and on behalf of ScottishPower)	A	Both definitions refer to BMUs. It may be more prudent to redefine this to allow the values to be stated for individual GTs within a BMU
Drax Power	B	The proposed definitions appear reasonable.
SSE Generation	A	Operational consent for many wind farms require any noise emissions to stay within pre-determined limits. The definitions should be applicable to all technologies and not just for synchronous plant.
Eggborough Power	B	EPL has no comments.
RWE	A	We would suggest that, in developing the legal text, clarify the meaning of "...transitioning to operate at zero" and "...transitioning from operation at zero". We would prefer the use of the terms "Synchronise" and "De-synchronise" which are already used in BC2. Alternatively, the definition should refer to "output" as the quantity being measured and insert "MW" after "zero."
E.ON	A	We do not believe the definitions are sufficient as the parameter is not a single value and cannot be allocated to an individual BMU. The parameter must be able to reflect different time periods between BMU's at a power station. It may be more appropriate to reflect this as a matrix between BMU's at a power station. For example there may be 90 minutes between unit 1 and unit 2, but this reduces to 30 minutes between units 2 and 3 and 3 and 4. Achieving this may make administering the parameter more complex.
EDF Energy	A	We agree with the proposed definitions. Synchronising and De-Synchronising might not be appropriate terms to describe transition from or to

Respondent	Summary Indicator	Response
		zero by non-conventional BM Units, and the grouping of such BM Units in a Power Station might not be appropriate for related BM Units not in a conventional Power Station. It would be non-discriminatory to change their name and definition to reflect this. However, in practice the parameters are probably most applicable to conventional generating units at conventional power stations, and it would be pragmatic to continue these names and definitions unless there is a clear real requirement to change them.
Barking Power	B	We are happy with the definitions.

Q8. Do you have any views on whether there should be an upper limit on the values of Station Synchronising Interval and Station De-Synchronising Interval and what that upper limit should be?

Summary

A	B	C
Upper Limit	No Upper Limit	Neutral/Other
4	2	3

Respondent	Summary Indicator	Response
Seabank Power	C	No Comment
IBM (UK) Ltd. (for and on behalf of ScottishPower)	B	The SSI should not have an upper limit applied, it needs to be the genuine estimate of required time period and as we have previously stated it could be 3 hours. If a limit of 90 minutes was applied as suggested, then NGT could believe that if they BOAed a unit to start immediately following the synchronisation of an Unit it would be on in 90 minutes, when in reality it would not.
Drax Power	C	The problem with applying generic limits is they may not be physically possible. This could result in numerous plants requiring derogations from, or being prohibited from signing up to, the Grid Code.
SSE Generation	A	The upper limit should be 89 minutes.
Eggborough Power	C	In general both synchronising intervals are static and would be changed rarely as consistent with the current practice. There are occasions when a generator may need longer e.g. if station or unit transformers are out of service then this may require a longer period of time. In terms of the upper limit, this could be up to 90 minutes i.e. within the gate closed period as it is potentially possible for the generator to manage this risk then outside the gate.

Respondent	Summary Indicator	Response
RWE	A	In order to minimise the impact on the Balancing Mechanism, we suggest that these intervals be limited to one hour.
E.ON	A	We agree with the view that the parameter should have an upper limit of 90 minutes to be consistent with the application of Dynamic Parameters and extent of the Balancing Mechanism Window.
EDF Energy	B	In the first instance, there should be no artificial upper limit on the technical values that can be submitted. We would expect NGET to investigate submission of parameters which appeared to be technically unrealistic or to be set on a purely commercial basis, given the impact on balancing and imbalance prices. If there appeared to be any misuse of the parameters for unreasonable commercial purposes, the imposition of limits could be considered in future.
Barking Power	A	We do not believe there would be a requirement for values above 12 hours and in practice we would envisage submitted values being at the lower end of the range.

Industry Responses: Last Time to Cancel Sync

Q9. Are you in favour of formalising the Last Time to Cancel Sync parameter under paragraph BC2.5.3.1 of the Grid Code? Please tell us the reasons behind your response.

Summary

A	B	C
Yes	No	Neutral/Other
8	1	0

Respondent	Summary Indicator	Response
Seabank Power	A	Yes, any parameters that are used with the BM, should be formalised and adhered too. If (as present) they 'may' be taken into account, this could cause confusion if this is only applied to some BM Participants (and indeed BMU's).
IBM (UK) Ltd. (for and on behalf of ScottishPower)	B	We don't believe that this requires to be a formal parameter and is better suited to communication/negotiation between control rooms and the operational trading desk, as occurs at present.

Respondent	Summary Indicator	Response
Drax Power	A	We are in favour of formalising the Last Time to Cancel Sync parameter. This is because it represents a true technical parameter. We note that this seems to be the only parameter that will be published as “market information”. We believe that all data relating to formalised parameters should be published.
SSE Generation	A	Yes. We are in favour of formalising the Last Time to cancel Sync parameter. It is an important parameter for power plant integrity and will give transparency of the flexibility of a Gen Set or PPM to the System Operator and other stakeholders.
Eggborough Power	A	Yes. For all power stations there comes a point of no return for a station when it is being instructed to start up to have to actually run, with obvious costs both technical and financial behind stopping a synchronisation or delaying it.
RWE	A	We favour the formalising the Last Time to Cancel Sync parameter since it represent physical constraints on a generating unit for which there is no alternative form of Grid Code submission to achieve the required outcome.
E.ON	A	We support formalising the Last Time to Cancel Sync parameter. We agree with the arguments for the proposal and would welcome the additional transparency this would bring to the market.
EDF Energy	A	Yes. Being able to specify a point in time when NGET cannot change its mind is important in terms of plant integrity. The cost of cancelling an imminent synchronisation depends on the notice period. It is not possible to reflect the time varying costs in bid prices once gate closure has passed. Use of this parameter allows more certainty in the potential cost of cancelling synchronisation to be included in bid prices. Given that NGET routinely complies with the parameter submitted as Other Relevant Data and expects to continue to do so, formalising this parameter would provide certainty to all parties concerned. We would expect NGET to investigate submission of parameters which appeared to be technically unrealistic or to be set on a purely commercial basis, given the impact on balancing and imbalance costs and prices.
Barking Power	A	Yes, there is a technical point before synchronisation, after which time the start has commenced, costs have been incurred and technical processes must be stopped as opposed to not started.

Q10. Do you have any comments on the proposed definition for Last Time to Cancel Sync as stated in section 5.5 of this consultation?

Summary

A	B
Additional Comment	Nothing Further To Add
3	6

Respondent	Summary Indicator	Response
Seabank Power	B	No Comment
IBM (UK) Ltd. (for and on behalf of ScottishPower)	A	The definition, leads this value being used to define two separate dynamics when the BMU is desynchronised due to a BOA: NDZ and LTCS
Drax Power	B	The proposed definition appears reasonable.
SSE Generation	A	The definitions should be applicable to all technologies and not just for synchronous plant. Many renewable BMUs are able to cancel the start within a minute and the definition needs to reflect this flexibility (otherwise it would appear to be discriminatory).
Eggborough Power	B	EPL has no comments.
RWE	A	Insert "minimum" before "notification (line 2 of Chapter 5.5) As stated in Q7, We would prefer the Insert "MW" after "zero" (line 4 of Chapter 5.5). We suggest that the sentence "Up to three values of this parameter may be submitted, each being applicable for a specified range of values of Notice to Deviate from Zero" be deleted since this would introduce additional and unnecessary complexity.
E.ON	B	We have no comments on the definition.
EDF Energy	B	No. The expression "Sync" might not be appropriate to non-conventional sources of balancing, but unless there are particular current real examples, it would be pragmatic to maintain this expression.
Barking Power	B	We are happy with the definition.

Q11. Do you have any views on whether there should be an upper limit on the value of Last Time to Cancel Sync and what that upper limit should be?

Summary

A	B	C
Upper Limit	No Upper Limit	Neutral/Other
8	1	0

Respondent	Summary Indicator	Response
Seabank Power	A	No greater than 89 mins, as this would prove difficult when issuing BOA's (past the wall)
IBM (UK) Ltd. (for and on behalf of ScottishPower)	B	There should be no upper limit on this value because different types of Unit will have different characteristics. Quite often for coal plant the steam is on its way to the turbine about 120mins before sync and cannot be cancelled without severe consequences for the plant.
Drax Power	A	We believe that the 89 minute argument provided is reasonable. Therefore, we suggest that an upper limit of 89 minutes is adopted.
SSE Generation	A	Yes. The upper limit should be one (1) hour.
Eggborough Power	A	In theory the upper limit value should be consistent with the BM timescales and NDZ of the station.
RWE	A	In order to minimise the impact on the Balancing Mechanism, we suggest that the interval be limited to one hour.
E.ON	A	In order to be consistent with the principles of Dynamic Parameters and the extent of the Balancing Mechanism Window we would agree with an upper limit of 90 minutes.
EDF Energy	A	The upper limit on the value of Last Time to Cancel Sync should be 60 minutes. The duration of the balancing window open just after any particular gate closure, and effectively the maximum notice period for an offer or bid requiring a start-up is 89 minutes. However, if the Last Time to Cancel Sync were 89 minutes, an acceptance issued during the period to the next gate closure for a start-up during the BM Window could not be undone. This seems overly restrictive and could deter NGET from issuing efficient instructions. A value of 60 minutes would allow instructions issued with 60-89 minutes notice to be undone.
Barking Power	A	The Last Time to Cancel Sync should be capped by the currently submitted NDZ at the time a BOAI is received.

Q12. Do you think that the Last Time to Cancel Sync parameter should be used to manage the notice required to re-synchronise a BM Unit which has a non-zero PN, but has been issued Bid-Offer Acceptances to keep it off? Please tell us the reasons for your answer and any alternative approaches that occur to you.

Summary

A	B	C
Yes	No	Neutral/Other
4	2	3

Respondent	Summary Indicator	Response
Seabank Power	C	As we understand it, this is the current method employed by National Grid, however a value less than the submitted BMU NDZ may prove difficult for BM Participants, as the notification to synchronise back to the submitted PN will be smaller. Would it not be possible to adhere to: if Submitted PN > 0 and BOA = 0, then Last Time to Cancel Sync = NDZ ?
IBM (UK) Ltd. (for and on behalf of ScottishPower)	B	No. Regardless of whether the unit is off due to a Bid-Offer acceptance or a scheduled de-synch, the station still require the submitted NDZ value to re-synchronise. If a LTCS was submitted, then this value could be significantly shorter than the NDZ. In effect the LTCS becomes the NDZ when the unit is BOA'd off and this would require the LTCS to be submitted at a value equal to NDZ. This would therefore be misleading and present a loss of flexibility to NGT.
Drax Power	A	This seems sensible. The current informal method involves using a telephone conversation(s) starting before the minimum zero time expires, where National Grid informs the unit whether it is staying off longer than the minimum time. We believe that there is value in retaining this informal communication route, rather than relying solely on communication by EDL.
SSE Generation	B	No. The NDZ should be used and should be open to re submit when the Bid-Offer Acceptance has been extended beyond the MZT. A power plant is not held at the point where there is no turning back when off as the result of a Bid-Offer Acceptance. The Last Time to Cancel Sync parameter is the no turning back point within the run up sequence of a Generator.
Eggborough Power	C	EPL thinks that the parameter should probably be consistent with the NDZ.
RWE	A	Yes for the reasons given under Q9.

Respondent	Summary Indicator	Response
E.ON	A	We do think the parameter should be used to manage the notice required to resynchronise a BM Unit which has a non-zero PN but has been issued a BOA to keep it off. This reflects the NETSO's current practice and use of this parameter and would reflect the notice period in the event that the NETSO wants to synch the generator where this is in advance of a PN to move the BMU from zero.
EDF Energy	A	Yes.
Barking Power	C	Shouldn't the NDZ apply? I'm not sure how this works as there is no guarantee that the NDZ would be less than 90 minutes? Or can Grid only de-sync units with NDZs less than 90 minutes? No comment.

Q13. Are there any other parameters that should be formalised in addition to those already covered by this consultation? Please tell us the reason for your response.

Summary

A	B	C
Yes	No	Neutral/Other
2	5	2

Respondent	Summary Indicator	Response
Seabank Power	C	No Comment
IBM (UK) Ltd. (for and on behalf of ScottishPower)	C	No Comment
Drax Power	B	Drax is not aware of any additional parameters that should be formalised.
SSE Generation	A	Yes, Consideration should be given to introducing a parameter which reflects the NDZ profile of a Gen Set after shutdown to give the System Operator clearer visibility of the hot, warm or cold NDZ within the Operational Day.
Eggborough Power	A	EPL would like to see the SO consider making "hold points" a formal parameter. At the current time a generator cannot submit hold points in their run up rate or run down rates. For example if a generator loads to 280MW then has a hold for 15 minutes before continuing to ramp up this can incur additional costs as it is not the loading profile that the plant can optimise its efficiency at.

Respondent	Summary Indicator	Response
		When submitting a PN it would be easy to put in the profile. However, having 3 run up rates and 2 break points, means that it is not possible to indicate to the SO the correct loading profile. This results in the SO often bringing the units on to full loads without a hold point in. The same is true for run down rates. EPL would suggest that a way around this, is to either increase the number of run up and run down rates and associated hold points or create a parameter for hold points with load levels and time.
RWE	B	No.
E.ON	B	We have not identified any additional parameters that should be considered at this time.
EDF Energy	B	No, but see the answer to Q1.
Barking Power	B	No.

Industry Responses: Other Comments

Q14. Are there any other comments you would like to make?

Summary

A	B
Yes	No
4	5

Respondent	Summary Indicator	Response
Seabank Power	B	No Comment
IBM (UK) Ltd. (for and on behalf of ScottishPower)	A	<p>An updated definition of Two Shifting Limit could be as follows:</p> <p>“The maximum number of times in any Operational Day that a BM Unit’s active power output may transition to zero”.</p> <p>which attempts to deal with non-synchronous units by only referring to transitions from zero. This does not address that pump-storage units can be synchronised and spinning at zero or machines operating as synchronous condensers, and may inadvertently be included.</p> <p>A possible alternative is</p> <p>“The maximum number of times in any Operational Day that a BM Unit can connect to the transmission system.”</p>

Respondent	Summary Indicator	Response
Drax Power	A	<p>Two Shifting Limits, and Synchronisation and De-Synchronisation intervals, relate to physical actions on pieces of physical plant. As such, they will be limited by technical, manpower or environmental related limits, which can only be determined by the plant owner. Within the consultation document, there is a suggestion that these limits and intervals are actually proxies for cost and are used as economic tools, rather than true technical constraints. The reality is that all dynamic parameters, whether it be MEL, SEL, Ramp Rates, NDZ, etc., are all “contaminated” by cost or value considerations.</p> <p>Given that over the next decade the market will face the connection of large volumes of unpredictable generation and greater price volatility, it is in the interests of all generators to be as flexible as possible in order to maximise their returns. When considering the current running patterns of CCGTs compared to that just a few years ago, it is clear to see that there is much greater flexibility in running regimes. This has been driven by economic imperative, not changes to industry codes.</p> <p>It is important to ensure that the processes adopted by the industry are simple, flexible and encourage, rather than force, generators into offering greater flexibility. Encouraging competition in the delivery of flexibility services will provide cost efficiencies, which will ultimately benefit the end consumer.</p>
SSE Generation	A	<p>We would like to know what the hierarchy of the logic is for decision making on parameters used to issue BOA's e.g. existing dynamic parameters and if parameters such as 'Last Time to Cancel Sync' are introduced. We would envisage the worst case constraining parameters to be used.</p>
Eggborough Power	B	No comment.
RWE	B	No comment.
E.ON	B	We have no additional comments.
EDF Energy	A	<p>These parameters influence and affect the balancing of the system; the bids and offers and other balancing actions that NGET take; the imbalance prices and RCRC and BSUoS that results. If these parameters become firm as suggested by the proposers, they should be visible to market participants.</p>
Barking Power	B	No.

Annex 3
B/12 Formalising Two Shifting Limit and other
parameters

Original Responses

Response submitted by Barking Power

Q1. Are you in favour of adopting a parameter similar to Two Shifting Limit as a Dynamic Parameter under paragraph BC2.5.3.1 of the Grid Code? Please tell us the reasons for your response.

No comment.

Q2. Do you have any views on whether, if adopted, Two Shifting Limit should limit transitions from zero (Synchronisations) or transitions to zero (De-Synchronisations)? Please tell us the reasons for your response.

Any limit should be applied to transitions from zero; this being the point at which costs are incurred.

Q3. If Two Shifting Limit was adopted, do you have any views on the timescales over which it should apply e.g. Operational Day, week, year etc? Please tell us the reasons for your response.

The Two Shifting Limit should not be applied to any period over 24 hours otherwise it is too far departed from BM timescales.

Q4. If adopted, should Two Shifting Limit apply to only those transitions to/from zero that result from Bid-Offer Acceptances, or to all transitions to/from zero i.e. including those as a result of submitted Physical Notifications and Maximum Import and Export Limits? Please tell us the reasons for your response.

All transitions from zero should be taken into account. It is the cost and risk arising from all starts that needs to be managed.

Q5. In the interim period (prior to any formal Code changes), should National Grid to take into account the Two Shift Limit issuing Bid-Offer Acceptances? Please tell us the reason for your response.

No opinion. However, if taken into account, submitted information must be made public for all BMUs to enable effective competition in the Balancing Mechanism.

Q6. Are you in favour of formalising the Station Synchronising Interval and Station De-Synchronising Interval parameters under paragraph BC2.5.3.1 of the Grid Code? Please tell us the reasons for your response.

Yes. Available manpower is a major factor in dictating the amount of time that is required between BMU starts, along with possible additional technical constraints.

Q7. Do you have any comments on the proposed definitions for Station Synchronising Interval and Station De-Synchronising Interval as stated in sections 4.2.1 and 4.2.2 of this consultation?

We are happy with the definitions.

Q8. Do you have any views on whether there should be an upper limit on the values of Station Synchronising Interval and Station De-Synchronising Interval and what that upper limit should be?

We do not believe there would be a requirement for values above 12 hours and in practice we would envisage submitted values being at the lower end of the range.

Q9. Are you in favour of formalising the Last Time to Cancel Sync parameter under paragraph BC2.5.3.1 of the Grid Code? Please tell us the reasons behind your response.

Yes, there is a technical point before synchronisation, after which time the start has commenced, costs have been incurred and technical processes must be stopped as opposed to not started.

Q10. Do you have any comments on the proposed definition for Last Time to Cancel Sync as stated in section 5.5 of this consultation?

We are happy with the definition.

Q11. Do you have any views on whether there should be an upper limit on the value of Last Time to Cancel Sync and what that upper limit should be?

The Last Time to Cancel Sync should be capped by the currently submitted NDZ at the time a BOAI is received.

Q12. Do you think that the Last Time to Cancel Sync parameter should be used to manage the notice required to re-synchronise a BM Unit which has a non-zero PN, but has been issued Bid-Offer Acceptances to keep it off? Please tell us the reasons for your answer and any alternative approaches that occur to you.

Shouldn't the NDZ apply? I'm not sure how this works as there is no guarantee that the NDZ would be less than 90 minutes? Or can Grid only de-sync units with NDZs less than 90 minutes?

No comment.

Q13. Are there any other parameters that should be formalised in addition to those already covered by this consultation? Please tell us the reason for your response.

No.

Q14. Are there any other comments you would like to make?

No.



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Nick Sargent
Electricity Codes
Regulatory Frameworks
National Grid Electricity Transmission plc
National Grid House
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24 April 2012

Dear Nick,

B/12 Formalising Two Shifting Limit and other parameters

Drax Power Limited ("Drax") is the operating subsidiary of Drax Group plc and the owner and operator of Drax Power Station in North Yorkshire. Drax also owns an electricity supply business, Haven Power Limited ("Haven"), which supplies electricity to a range of business customers and provides an alternative route to market for some of Drax's power output.

We welcome the opportunity to respond to the Electricity Balancing System Group consultation. Answers to the specific questions raised by the consultation can be found in Annex 1 to this letter.

If you would like to discuss any of the views expressed in this response, please feel free to contact me.

Yours sincerely,

By email

Cem Suleyman
Regulatory Analyst
Regulation and Policy

Annex 1: Response to the specific consultation questions

Q1. Are you in favour of adopting a parameter similar to Two Shifting Limit as a Dynamic Parameter under paragraph BC2.5.3.1 of the Grid Code? Please tell us the reasons for your response.

We do not believe a Two Shifting Limit parameter is necessary. This parameter is not necessary because generators are able to signal their availability to Two Shift using existing dynamic data, such as price and volume data in the Balancing Mechanism (BM).

Q2. Do you have any views on whether, if adopted, Two Shifting Limit should limit transitions from zero (Synchronisations) or transitions to zero (De-Synchronisations)? Please tell us the reasons for your response.

If adopted, we believe that the Two Shifting Limit should continue to limit transitions to zero (i.e. De-Synchronisation). Once a plant is Synchronised (from zero) and then De-Synchronised (to zero) within period, the unit would be unavailable to start up again. By limiting transitions to zero, the plant will still be available to run, although at a higher total cost.

Q3. If Two Shifting Limit was adopted, do you have any views on the timescales over which it should apply e.g. Operational Day, week, year etc? Please tell us the reasons for your response.

Drax does not have a preference on the timescales adopted, although we agree that the 05:00 to 05:00 operational day is a continuation of the practice applied in the previous Electricity Pool arrangements. However, if the parameter was to be adopted, it might be more sensible to treat it the same as other dynamic data i.e. on a rolling basis.

Q4. If adopted, should Two Shifting Limit apply to only those transitions to/from zero that result from Bid-Offer Acceptances, or to all transitions to/from zero i.e. including those as a result of submitted Physical Notifications and Maximum Import and Export Limits? Please tell us the reasons for your response.

We believe that the Two Shifting Limit should apply to all transitions. The reason a generator limits the number of Two Shifts is likely to be a technical and / or manpower issue. It is irrelevant as to how the Two Shift is triggered.

Q5. In the interim period (prior to any formal Code changes), should National Grid to take into account the Two Shift Limit when issuing Bid- Offer Acceptances? Please tell us the reason for your response.

It is our understanding that National Grid already takes this information into account when issuing Bid-Offer Acceptances. We believe that it would be perverse for generators to provide this information and for National Grid to then ignore it. NGC do not necessarily know why a Two Shifting Limit is declared on any particular unit, as such they cannot calculate the consequential effect of their actions. It could, for instance, lead to a loss of capacity or lead to a station exceeding emission limits.

Q6. Are you in favour of formalising the Station Synchronising Interval and Station De-Synchronising Interval parameters under paragraph BC2.5.3.1 of the Grid Code? Please tell us the reasons for your response.

Drax believes that the parameters should be formalised. We note that National Grid routinely complies with these parameters, which suggests that these parameters can be technically achieved.

Q7. Do you have any comments on the proposed definitions for Station Synchronising Interval and Station De-Synchronising Interval as stated in sections 4.2.1 and 4.2.2 of this consultation?

The proposed definitions appear reasonable.

Q8. Do you have any views on whether there should be an upper limit on the values of Station Synchronising Interval and Station De-Synchronising Interval and what that upper limit should be?

The problem with applying generic limits is they may not be physically possible. This could result in numerous plants requiring derogations from, or being prohibited from signing up to, the Grid Code.

Q9. Are you in favour of formalising the Last Time to Cancel Sync parameter under paragraph BC2.5.3.1 of the Grid Code? Please tell us the reasons behind your response.

We are in favour of formalising the Last Time to Cancel Sync parameter. This is because it represents a true technical parameter. We note that this seems to be the only parameter that will be published as “market information”. We believe that all data relating to formalised parameters should be published.

Q10. Do you have any comments on the proposed definition for Last Time to Cancel Sync as stated in section 5.5 of this consultation?

The proposed definition appears reasonable.

Q11. Do you have any views on whether there should be an upper limit on the value of Last Time to Cancel Sync and what that upper limit should be?

We believe that the 89 minute argument provided is reasonable. Therefore, we suggest that an upper limit of 89 minutes is adopted.

Q12. Do you think that the Last Time to Cancel Sync parameter should be used to manage the notice required to re-synchronise a BM Unit which has a non-zero PN, but has been issued Bid-Offer Acceptances to keep it off? Please tell us the reasons for your answer and any alternative approaches that occur to you.

This seems sensible. The current informal method involves using a telephone conversation(s) starting before the minimum zero time expires, where National Grid informs the unit whether it is staying off longer than the minimum time. We believe that there is value in retaining this informal communication route, rather than relying solely on communication by EDL.

Q13. Are there any other parameters that should be formalised in addition to those already covered by this consultation? Please tell us the reason for your response.

Drax is not aware of any additional parameters that should be formalised.

Q14. Are there any other comments you would like to make?

Two Shifting Limits, and Synchronisation and De-Synchronisation intervals, relate to physical actions on pieces of physical plant. As such, they will be limited by technical, manpower or environmental related limits, which can only be determined by the plant owner. Within the consultation document, there is a suggestion that these limits and intervals are actually proxies for cost and are used as economic tools, rather than true technical constraints. The reality is that all dynamic parameters, whether it be MEL, SEL, Ramp Rates, NDZ, etc., are all “contaminated” by cost or value considerations.

Given that over the next decade the market will face the connection of large volumes of unpredictable generation and greater price volatility, it is in the interests of all generators to be as flexible as possible in order to maximise their returns. When considering the current running patterns of CCGTs compared to that just a few years ago, it is clear to see that there is much greater flexibility in running regimes. This has been driven by economic imperative, not changes to industry codes.

It is important to ensure that the processes adopted by the industry are simple, flexible and encourage, rather than force, generators into offering greater flexibility. Encouraging competition in the delivery of flexibility services will provide cost efficiencies, which will ultimately benefit the end consumer.

Nick Sargent
Electricity Codes
Regulatory Frameworks
National Grid Electricity Transmission plc
National Grid House
Warwick Technology Park
Gallows Hill
Warwick, CV34 6DA

24 April 2012

Dear Nick

B/12 Formalising Two Shifting Limit and other parameters

EDF Energy is one of the UK's largest energy companies with activities throughout the energy chain. Our interests include nuclear, coal and gas-fired electricity generation, renewables, combined heat and power plants, and energy supply to end users. We have over five million electricity and gas customer accounts in the UK, including residential and business users.

We do not support the proposal to make the Two Shifting Limit (TSL) a firm parameter that NGET must adhere to when issuing balancing instructions. Such an amendment would represent a move towards central dispatch by NGET. For various reasons considered during the creation of the current NETA arrangements, and briefly discussed in our detailed comments, this could easily lead to inefficient dispatch and prices, if submitted information and its processing is imperfect or inconsistent.

Given that TSL has effect over a whole day, potentially committing NGET to balancing actions well beyond the current Balancing Mechanism Window, it could adversely impact other Balancing Mechanism participants and distort competition. The risks and repercussions arising from what might seem an innocuous change could be significant.

Although this is not captured in the consultation we understand, from participating in the Electricity Balancing System Group, that there are calls for the process for submitting parameters to be fully automated, as opposed to sending faxes. We are supportive of this change.

Our detailed responses are set out in the attachment to this letter. Should you wish to discuss any of the issues raised in our response or have any queries, please contact me on 01452 658415.

Yours sincerely,

A handwritten signature in black ink, appearing to read "Mark Cox".

Mark Cox
Head of Trading and Transmission Arrangements

Attachment

B/12 Formalising Two Shifting Limit and other parameters

EDF Energy's response to your questions

Consultation Questions

Q1. Are you in favour of adopting a parameter similar to Two Shifting Limit as a Dynamic Parameter under paragraph BC2.5.3.1 of the Grid Code?

No. Any generating unit is always capable of shutting down or of being isolated from the system. But shutting down; being unexpectedly unable to generate, and starting up again, involve costs, compared with simply operating or not operating or operating as the generator had expected. These costs vary considerably according to circumstances.

Although we acknowledge some of the arguments set out to support the proposal, we are not persuaded that the benefits outweigh the potential risks and repercussions the change could create. Additionally, it is not clear what criteria NGET would use to shut down stations in times of excess generation, if sufficient numbers of generators have submitted values of TSL that prevent shutdown at those times.

An obligation on NGET to take into consideration more complex dynamic parameters would represent a move from NETA back towards central despatch. It would transfer responsibility for optimising the operation of generating units over timescales of a day from a generator using its own forecasts and dynamically setting prices and parameters, to NGET using more complex parameters. While there may be some merits in this, the interaction of different dynamic parameters and prices could lead to inefficient outcomes as was suspected under the Pool. Under NETA, prices can be changed at any time, and the interaction between prices and complex dynamics could be more complex than under the Pool.

Under central despatch, actions are managed by the system operator over longer periods than the balancing window, according to long term dynamic parameters and costs rather than short term prices.

Theoretically, this can be efficient, but only to the extent the parameters are correct for the circumstances and self-consistent with other parameters, and that prices are cost-reflective taking into consideration those parameters. Any anomalies in or between dynamic parameters can lead to despatch inefficiencies and balancing prices that are less cost-reflective.

If existing parameters are insufficient, a Grid Code / CUSC modification to create a "Two Shifting", "Startup" or "Shutdown" cost could be considered.

Q2. Do you have any views on whether, if adopted, Two Shifting Limit should limit transitions from zero (Synchronisations) or transitions to zero (De-Synchronisations)?

If the proposal is adopted, TSL should limit transitions to zero, rather than from zero. This would be consistent with custom and practice and minimise the impact of the change.

Q3. If Two Shifting Limit was adopted, do you have any views on the timescales over which it should apply e.g. Operational Day, week, year etc?

If the proposal is adopted, the applicable timescale should be an Operational Day. This would be consistent with custom and practice and minimise the impact of the change.

Q4. If adopted, should Two Shifting Limit apply to only those transitions to/from zero that result from Bid-Offer Acceptances, or to all transitions to/from zero i.e. including those as a result of submitted Physical Notifications and Maximum Import and Export Limits?

If the proposal is adopted, TSL should apply to all transitions to zero. This would simplify operational and commercial planning by power stations. All shutdowns would count towards the limit. The issue would remain of what should be done in circumstances when there is too much generation that cannot be shutdown, if this parameter were to be firm.

Q5. In the interim period (prior to any formal Code changes), should National Grid [be obligated?] to take into account the Two Shift Limit when issuing Bid-Offer Acceptances?

NGET should only take into account Two Shifting Limit to the extent that they do currently, as a parameter used for guidance, where economic balancing permits. If a plant has a high cost for performing a Two Shift, it should be capable of pricing itself appropriately in the Balancing Mechanism.

Q6. Are you in favour of formalising the Station Synchronising Interval and Station De-Synchronising Interval parameters under paragraph BC2.5.3.1 of the Grid Code?

Yes. From an operational perspective, the parameters allow stations to inform NGET of the required interval between starts/shut-downs of successive individual generating units within a power station. Given that NGET routinely complies with these parameters submitted as Other Relevant Data and expects to continue doing so, formalising these parameters would provide certainty to all parties concerned.

We would expect NGET to investigate submission of parameters which appeared to be technically unrealistic or to be set on a purely commercial basis, given the impact on balancing and imbalance costs and prices.

There is more justification for formalising the parameters for synchronisation, because the technical limitations on synchronising/starting are probably more rigid than those on de-synchronising (given that a unit can always desynchronise if absolutely necessary, at a cost).

Q7. Do you have any comments on the proposed definitions for Station Synchronising Interval and Station De-Synchronising Interval as stated in sections 4.2.1 and 4.2.2 of this consultation?

We agree with the proposed definitions.

Synchronising and De-Synchronising might not be appropriate terms to describe transition from or to zero by non-conventional BM Units, and the grouping of such BM Units in a Power Station might not be appropriate for related BM Units not in a conventional Power Station. It would be non-discriminatory to change their name and definition to reflect this. However, in practice the parameters are probably most applicable to conventional generating units at conventional power stations, and it would be pragmatic to continue these names and definitions unless there is a clear real requirement to change them.

Q8. Do you have any views on whether there should be an upper limit on the values of Station Synchronising Interval and Station De-Synchronising Interval and what that upper limit should be?

In the first instance, there should be no artificial upper limit on the technical values that can be submitted. We would expect NGET to investigate submission of parameters which appeared to be technically unrealistic or to be set on a purely commercial basis, given the impact on balancing and imbalance prices. If there appeared to be any misuse of the parameters for unreasonable commercial purposes, the imposition of limits could be considered in future.

Q9. Are you in favour of formalising the Last Time to Cancel Sync parameter under paragraph BC2.5.3.1 of the Grid Code?

Yes. Being able to specify a point in time when NGET cannot change its mind is important in terms of plant integrity. The cost of cancelling an imminent synchronisation depends on the notice period. It is not possible to reflect the time varying costs in bid prices once gate closure has passed. Use of this parameter allows more certainty in the potential cost of cancelling synchronisation to be included in bid prices.

Given that NGET routinely complies with the parameter submitted as Other Relevant Data and expects to continue to do so, formalising this parameter would provide certainty to all parties concerned.

We would expect NGET to investigate submission of parameters which appeared to be technically unrealistic or to be set on a purely commercial basis, given the impact on balancing and imbalance costs and prices.

Q10. Do you have any comments on the proposed definition for Last Time to Cancel Sync as stated in section 5.5 of this consultation?

No. The expression "Sync" might not be appropriate to non-conventional sources of balancing, but unless there are particular current real examples, it would be pragmatic to maintain this expression.

Q11. Do you have any views on whether there should be an upper limit on the value of Last Time to Cancel Sync and what that upper limit should be?

The upper limit on the value of Last Time to Cancel Sync should be 60 minutes. The duration of the balancing window open just after any particular gate closure, and effectively the maximum notice period for an offer or bid requiring a start-up is 89 minutes. However, if the Last Time to Cancel Sync were 89 minutes, an acceptance issued during the period to the next gate closure for a start-up during the BM Window could not be undone. This seems overly restrictive and could deter NGET from issuing efficient instructions. A value of 60 minutes would allow instructions issued with 60-89 minutes notice to be undone.

Q12. Do you think that the Last Time to Cancel Sync parameter should be used to manage the notice required to re-synchronise a BM Unit which has a non-zero PN, but has been issued Bid-Offer Acceptances to keep it off?

Yes.

Q13. Are there any other parameters that should be formalised in addition to those already covered by this consultation?

No, but see the answer to Q1.

Q14. Are there any other comments you would like to make?

These parameters influence and affect the balancing of the system; the bids and offers and other balancing actions that NGET take; the imbalance prices and RCRC and BSUoS that results. If these parameters become firm as suggested by the proposers, they should be visible to market participants.

EDF Energy
April 2012

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24 April 2012

Dear Mr Sargent

Introduction

Eggborough Power Limited (EPL) is an independent generator which owns and operates Eggborough Power Station (EPS), a 2,000 MW coal fired power station situated in the Aire Valley in North Yorkshire. EPS was previously owned and operated by British Energy (and latterly EDF) to provide flexible and reliable mid merit support to the "baseload" nuclear portfolio. EPL is now owned by two substantial private shareholders, SVP and Bluebay and is operating as an essentially merchant power plant in the wholesale market.

As a small player, with limited resources, EPL fully supports the formalisation of the two shift limit (TSL) parameter. EPL believes that technical limits that impact how and when a plant can respond to any System Operator (SO) instructions should be formally recognised and adhered to. It is logical, in trying to run an economic and efficient system, for the SO to be able to give instructions to generators that it knows they can technically deliver on, while encouraging plant to offer economic prices within their operational parameters. The commercial signals embedded in the NETA design encourage generators to do what they say they will do, which needs to be balanced with the generators right to tell the SO how it can, and is willing to, operate.

Q1. Are you in favour of adopting a parameter similar to Two Shifting Limit as a Dynamic Parameter under paragraph BC2.5.3.1 of the Grid Code?

Yes.

Making the TSL a formal parameter will make it easier for smaller players, with limited resources to signal their desired operating regime to the SO. It has been pointed out in discussions around this issue that some players use the existing BM parameters to signal a desired TSL. A formal TSL will therefore simply allow generators without larger 24 hour operations teams to signal the TSL without persistently altering their BM parameters, with the associated risks of human error.

In practical terms the current arrangements mean; Units offer power into the Balancing Mechanism (BM) at a price with its technical parameters (a true reflection of how fast they can alter output, availability, etc.). If the plant is then called it can then give a longer notice to Minimum Zero Time. If the SO then instructs it off, it then has to give extremely high offer prices, set its Maximum Export Limit to zero or provide a longer Minimum Non-Zero Time. The effect is that the SO can lose plant margin during the day, as false availability signals are sent, or prices can become significantly higher, as plants use the BM data to signal operational issues to the SO.

The reason prices rise is because many Units have limits on the number of starts between outages, for a mix of technical, safety and commercial reasons, making it more expensive to undertake numerous additional starts and pull outages forward. Again this can have a knock on effect on plant margin. Unless these Units are very careful not to get numerous starts, in a winter with significant peaking plant usage, those flexing Units will have to go on outages earlier than planned. If outages cannot be properly managed, as generators try to spread outages over the year, clumping of outages will push up not only balancing costs, but forward power prices will also increase.

The ability to signal in advance to the SO the limited flexibility in the plants, their prices will be lower and the SO will have a clear idea of actual plant margin in any given day. This may mean they hold more plant part loaded in the middle of the day, but the overall cost will be lower. EPL would suggest that the increasing volumes of intermittent generation and the impact that has on the need for flexibility is going to require additional plant to be held on part loaded in any event. We disagree that the plant will foreclose the market to other parties, as there is nothing to stop the SO desynchronising this plant if it wants to, it will simply know that having done so it will not be available to restart.

EPL does recognise that it is possible to use the Dynamic Data under the Balancing and Settlement Code (BSC) to signal to the SO its ability to operate within certain timescales. However, for a small company, with limited operational staff, the persistent altering of BM data, rather than being able to put in standing data, is onerous. It is also likely that human error could occur and the penalties on the generator if then issued with instructions it cannot deliver can be severe. By placing the Two Shifting Limits on a formal footing will reduce risks and costs for smaller players to the benefit of competition. New entrants would also find it easier to enter the market if managing the operational risks is made cheaper and easier.

The use of high offer prices to signal a desire not to run also runs the risk of regulatory investigations, with associated costs, as well as reputational risk. With the proposed Transmission Constraint Licence condition, the risks of being called at a high price only to find you were behind a constraint increase the regulatory risks. It also does the industry as a whole no favours to have third parties (customers, journalists, MPs, etc.) be able to point at high offer prices without understanding these are being used as operational signals.

EPL would therefore support the Grid Code being altered to add a new definition of physical parameters, against which BOAs will also be considered. We believe that following a change to the Grid Code that the BSC will also need to alter to include the Two Shifting Limits in the Dynamic Data Set as defined in BSC Section Q2.1.2.

Q2. Do you have any views on whether, if adopted, Two Shifting Limit should limit transitions from zero (Synchronisations) or transitions to zero (De-synchronisations)?

EPL would like to see the TSL defined as a limit on transitions **from** zero (Synchronisations). This is because it is the starts that create more technical issues for plants than de-synchronisations.

Q3. If Two Shifting Limit was adopted, do you have any views on the timescales over which it should apply e.g. Operational Day, week, year etc?

EPL believes that the TSL should work on a daily basis, fitting with the operational day 05:00 to 05:00, as we would interpret it now and as we believe it was interpreted in the past. We recognise that this is a somewhat arbitrary timeframe, but we the GB electricity market works on a daily basis and the parameters should be designed on the same operational day timeframe.

Q4. If adopted, should Two Shifting Limit apply to only those transitions to/from zero that result from Bid-Offer Acceptances, or to all transitions to/from zero i.e. including those as a result of submitted Physical Notifications and Maximum Import and Export Limits?

The TSL must apply to all starts so bids and offers need to take account of physical notifications that have already been submitted by the generator. For instance if a plant has a PN to start operating at 4pm, and the SO then synchronises the unit in the morning currently it must run it for its MNZT then take it off for its MZT. The unit would then have to resynchronise in the afternoon to run to its original planned PN would result in two starts.

If PNs have already been submitted prior to NGC issuing a Bid Offer acceptance instruction then they need to be taken account of. EPL believes that if generators have technical reasons for wanting a TSL then they should need that for all starts in a day not just some. The use of the TSL should not make it more complicated for the SO to balance the system, which different numbers of starts in a day may do. If in any given day a plant wants to do additional starts it should reset its TSL.

Q5. In the interim period (prior to any formal Code changes), should National Grid to take into account the Two Shift Limit when issuing Bid-Offer Acceptances?

EPL wants to see a formalised TSL implemented as soon as possible. The changes should be implemented on a "work around" until a more robust, IT based solution can be found. EPL has also stated in its proposed Grid Code change, that the use of the TSL must be transparent and thus reported somewhere publicly. Again we feel that a work around can be put in place to put TSL onto the SO web-site as an interim solution until a more formalised approach is established.

Q6. Are you in favour of formalising the Station Synchronising Interval and Station De-Synchronising Interval parameters under paragraph BC2.5.3.1 of the Grid Code?

Yes we fully support both parameters being placed on a formal footing under the Grid Code. It was our understanding that the SSI and SDI were intervals that were to be adhered to when issuing BOAi, and were surprised to find these were not formal parameters. We believe that many generators share our views that by giving these parameters to the SO they should be adhered to when plant is despatched and not to have some parameter that it is "optional" for the SO to adhere to them. This leads to confusion and suboptimal operation of the generator and the system as a whole.

There are technical issues that prevent stations desynchronising or synchronising units at the same time. Within gate closure if a unit has a PN, and the SO choose to issue a BOAi at the same time for another unit or change the synch or desynch time to conflict with another unit, then this is technically not something every station can do and therefore will result in an imbalance and commercial cost to the generator. If an instruction was issued, in general the station will reject the instruction. It is also an issue for desynchronising, i.e. a unit has a PN in, and the SO alters the desynchronisation time of another unit to coincide with the instruction then the generator has two issues: potential breach of the Grid Code as they may be generating away from their PN; and the cost of imbalance. Within the gate closure period, the generator cannot alter its PNs to take account of any changes that the SO may take which will result in imbalance charges for the generator.

Q7. Do you have any comments on the proposed definitions for Station Synchronising Interval and Station De-Synchronising Interval as stated in sections 4.2.1 and 4.2.2 of this consultation?

EPL has no comments.

Q8. Do you have any views on whether there should be an upper limit on the values of Station Synchronising Interval and Station De-Synchronising Interval and what that upper limit should be?

In general both synchronising intervals are static and would be changed rarely as consistent with the current practice. There are occasions when a generator may need longer e.g. if station or unit transformers are out of service then this may require a longer period of time. In terms of the upper limit, this could be up to 90 minutes i.e. within the gate closed period as it is potentially possible for the generator to manage this risk then outside the gate.

Q9. Are you in favour of formalising the Last Time to Cancel Sync parameter under paragraph BC2.5.3.1 of the Grid Code? Please tell us the reasons behind your response.

Yes. For all power stations there comes a point of no return for a station when it is being instructed to start up to have to actually run, with obvious costs both technical and financial behind stopping a synchronisation or delaying it.

Q10. Do you have any comments on the proposed definition for Last Time to Cancel Sync as stated in section 5.5 of this consultation?

EPL has not comments.

Q11. Do you have any views on whether there should be an upper limit on the value of Last Time to Cancel Sync and what that upper limit should be?

In theory the upper limit value should be consistent with the BM timescales and NDZ of the station.

Q12. Do you think that the Last Time to Cancel Sync parameter should be used to manage the notice required to re-synchronise a BM Unit which has a non-zero PN, but has been issued Bid-Offer Acceptances to keep it off?

EPL thinks that the parameter should probably be consistent with the NDZ.

Q13. Are there any other parameters that should be formalised in addition to those already covered by this consultation? Please tell us the reason for your response.

EPL would like to see the SO consider making "hold points" a formal parameter. At the current time a generator cannot submit hold points in their run up rate or run down rates. For example if a generator loads to 280MW then has a hold for 15 minutes before continuing to ramp up this can incur additional costs as it is not the loading profile that the plant can optimise its efficiency at. When submitting a PN it would be easy to put in the profile. However, having 3 run up rates and 2 break points, means that it is not possible to indicate to the SO the correct loading profile. This results in the SO often bringing the units on to full loads without a hold point in. The same is true for run down rates. EPL would suggest that a way around this, is to either increase the number of run up and run down rates and associated hold points or create a parameter for hold points with load levels and time.

EPL hopes that these comments are helpful, but if you would like to discuss any of them in more detail please do not hesitate to contact me.

Yours sincerely



Michelle Dixon
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Tuesday 24 April 2012

Re: B/12 Formalising Two Shifting Limit and other parameters consultation response

Dear Nick

Thank you for the opportunity to respond to this consultation. To summarise our view, E.ON does not support the Two Shift Limit becoming a formal dynamic parameter used by National Electricity Transmission System Operator's (NETSO) when constructing Bid/Offer Acceptances.

We agree with the arguments presented in the consultation paper against the proposal. In particular we are concerned about the detrimental impact this could have on the economic and efficient operation of and competition within the Balancing Mechanism. Obliging the NETSO to meet a parameter that extends beyond "the wall" is an artificial restriction on the NETSO in or near real time, which limits the ability of other competitors to be available at an economic price, or indeed for the generator with the TSL from revising its position in response to changes in the market. In our view the existing parameters of MZT and MNZT are already well established. These, along with the other dynamic parameters, have worked well since the introduction of NETA and we are not convinced that there is any need to change at this time.

With regard to the Station Synchronising and De-Synchronising Intervals and Last Time to Cancel Sync parameters, as these are being used in practice by the NETSO when making its decisions it would seem sensible to formalise these parameters to provide additional certainty, providing suitable text can be agreed for inclusion within the Grid Code.

We respond to each of the questions in the consultation further below.

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Two Shifting Limit

Question 1

We do not support the Two Shifting Limit becoming a Dynamic Parameter in the Grid Code for the reasons given above.

Question 2

We have no view on this question as we do not support the proposal.

Question 3

The interaction between the time period that the TSL applies for and how this relates to the timeframe of Gate Closure window and the real time Balancing Period is one of the reasons that we do not support the proposal.

Question 4

We have no view on this question as we do not support the proposal.

Question 5

We do not think the NETSO should take in to account the TSL any more that it is currently required to under the Grid Code as Other Relevant Data. We note the explanatory note produced by National Grid in July 2011 clarifying the use of the TSL. Given the confusion of its application it may be more appropriate to remove it entirely from the Grid Code.

Station Synchronising and De-Synchronising Intervals

Question 6

Yes, providing suitable text can be agreed for inclusion within the Grid Code. As National Grid works to these parameters in practice it seems sensible to formalise them to remove any uncertainty that might be created in classifying them as Other Relevant Data.

Question 7

We do not believe the definitions are sufficient as the parameter is not a single value and cannot be allocated to an individual BMU. The parameter must be able to reflect different time periods between BMU's at a power station. It may be more appropriate to reflect

this as a matrix between BMU's at a power station. For example there may be 90 minutes between unit 1 and unit 2, but this reduces to 30 minutes between units 2 and 3 and 3 and 4. Achieving this may make administering the parameter more complex.

Question 8

We agree with the view that the parameter should have an upper limit of 90 minutes to be consistent with the application of Dynamic Parameters and extent of the Balancing Mechanism Window.

Last Time to Cancel Sync

Question 9

We support formalising the Last Time to Cancel Sync parameter. We agree with the arguments for the proposal and would welcome the additional transparency this would bring to the market.

Question 10

We have no comments on the definition.

Question 11

In order to be consistent with the principles of Dynamic Parameters and the extent of the Balancing Mechanism Window we would agree with an upper limit of 90 minutes.

Question 12

We do think the parameter should be used to manage the notice required to re-synchronise a BM Unit which has a non-zero PN but has been issued a BOA to keep it off. This reflects the NETSO's current practice and use of this parameter and would reflect the notice period in the event that the NETSO wants to synch the generator where this is in advance of a PN to move the BMU from zero.

Question 13

We have not identified any additional parameters that should be considered at this time.



Question 14

We have no additional comments.

We hope you find our response helpful. Please do not hesitate to contact me should you wish to discuss any aspect of our response further.

Yours sincerely

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24th April 2012

Dear Nick

RWE RESPONSE – GRID CODE CHANGE B/12 FORMALISING TWO SHIFTING LIMIT AND OTHER PARAMETERS

Thank you for the invitation to provide comments on the above Grid Code consultation dated 29th March 2012. The following response is provided on behalf of the RWE group of companies operating within GB, including RWE Npower plc, RWE Npower Renewables Limited and RWE Supply & Trading GmbH.

Two Shifting Limit

- Q1. Are you in favour of adopting a parameter similar to Two Shifting Limit as a Dynamic Parameter under paragraph BC2.5.3.1 of the Grid Code? Please tell us the reasons for your response.
- A1. RWE does not favour the adoption of a parameter similar to Two Shifting Limit for the reasons given in the consultation paper Chapter 3.5, i.e. foreclosing the BM to other participants, potentially increasing BSUoS costs and also reducing transparency.
- Q2. Do you have any views on whether, if adopted, Two Shifting Limit should limit transitions **from** zero (Synchronisations) or transitions **to** zero (De-Synchronisations)? Please tell us the reasons for your response.
- A2. If adopted, a Two Shifting Limit should only apply to a transition from zero arising from an Offer Acceptance. It should not apply to a transition from zero arising from a Bid Acceptance (i.e. the ending of a Bid Acceptance). We consider that the transition from zero may be more effectively managed by National Grid than a transition to zero, which may require a generating unit to continue operating to the detriment of other BM Participants. As such, it should not apply to a transition to zero arising from either a Bid Acceptance or Offer Acceptance.

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- Q3. If Two Shifting Limit was adopted, do you have any views on the timescales over which it should apply e.g. Operational Day, week, year etc? Please tell us the reasons for your response.
- A3. If adopted, a Two Shifting Limit should apply only within the Operational Day. It would be inefficient and unacceptable for National Grid to be expected to manage the operating regime of generating units beyond the Operational Day.
- Q4. If adopted, should Two Shifting Limit apply to only those transitions to/from zero that result from Bid-Offer Acceptances, or to all transitions to/from zero i.e. including those as a result of submitted Physical Notifications and Maximum Import and Export Limits? Please tell us the reasons for your response.
- A4. If adopted, Two Shifting Limit should apply to transitions from zero as a result of Bid Acceptances only (also see answer to Q2). It would be inefficient and create unacceptable risks / costs for other BM participants if a Two Shifting Limit was to apply to transitions as a result of Bid-Offer Acceptances and also submitted PN and MEL data. We consider that the Generator is the most appropriate party to manage its PN and MEL data to ensure consistency with any Two Shifting Limit.
- Q5. In the interim period (prior to any formal Code changes), should National Grid to take into account the Two Shift Limit when issuing Bid-Offer Acceptances? Please tell us the reason for your response.
- A5. We do not support the application of Two Shifting Limit for the reasons given in answer to Q1. We are satisfied that the Grid Code provides alternative means to enable the Generator to achieve an effective Two Shifting Limit without intruding a specific parameter within the BM.

Station Synchronising and De-Synchronising Intervals

- Q6. Are you in favour of formalising the Station Synchronising Interval and Station De-Synchronising Interval parameters under paragraph BC2.5.3.1 of the Grid Code? Please tell us the reasons for your response.
- A6. We favour the formalising of Station Synchronising Interval and Station De-Synchronising Interval parameters since they represent physical constraints on a Power Station for which there is no alternative form of Grid Code submission to achieve the required outcome.
- Q7. Do you have any comments on the proposed definitions for Station Synchronising Interval and Station De-Synchronising Interval as stated in sections 4.2.1 and 4.2.2 of this consultation?
- A7. We would suggest that, in developing the legal text, clarify the meaning of “...*transitioning to operate at zero*” and “...*transitioning from operation at zero*”. We would prefer the use of the terms “Synchronise” and “De-synchronise” which are already used in BC2. Alternatively, the definition should refer to “output” as the quantity being measured and insert “MW” after “zero.
- Q8. Do you have any views on whether there should be an upper limit on the values of Station Synchronising Interval and Station De-Synchronising Interval and what that upper limit should be?
- A8. In order to minimise the impact on the Balancing Mechanism, we suggest that these intervals be limited to one hour.

Last Time to Cancel Sync.

- Q9. Are you in favour of formalising the Last Time to Cancel Sync parameter under paragraph BC2.5.3.1 of the Grid Code? Please tell us the reasons behind your response.
- A9. We favour the formalising the Last Time to Cancel Sync parameter since it represent physical constraints on a generating unit for which there is no alternative form of Grid Code submission to achieve the required outcome.
- Q10. Do you have any comments on the proposed definition for Last Time to Cancel Sync as stated in section 5.5 of this consultation?
- A10. Insert "minimum" before "notification (line 2 of Chapter 5.5) As stated in Q7, We would prefer the Insert "MW" after "zero" (line 4 of Chapter 5.5).
We suggest that the sentence "*Up to three values of this parameter may be submitted, each being applicable for a specified range of values of Notice to Deviate from Zero*" be deleted since this would introduce additional and unnecessary complexity.
- Q11. Do you have any views on whether there should be an upper limit on the value of Last Time to Cancel Sync and what that upper limit should be?
- A11. In order to minimise the impact on the Balancing Mechanism, we suggest that the interval be limited to one hour.
- Q12. Do you think that the Last Time to Cancel Sync parameter should be used to manage the notice required to re-synchronise a BM Unit which has a non-zero PN, but has been issued Bid-Offer Acceptances to keep it off? Please tell us the reasons for your answer and any alternative approaches that occur to you.
- A12. Yes for the reasons given under Q9.
- Q13. Are there any other parameters that should be formalised in addition to those already covered by this consultation? Please tell us the reason for your response.
- A13. No.

I trust that you will find the above comments helpful. If you wish to discuss any matters further please do not hesitate to contact me.

Yours sincerely

By e-mail

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RefB/12 (Formalising Two Shifting Limit
and other parameters) Industry
Consultation

Date 23rd April 2012

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Grid Code Industry Consultation B/12 (Formalising Two Shifting Limit and other parameters)

Thank you for the opportunity to comment on this Consultation. This response is submitted on behalf of ScottishPower Energy Management Ltd, ScottishPower Generation Ltd and ScottishPower Renewable Energy Ltd.

Responses to questions

Two Shift Limit (TSL)

Q1. Are you in favour of adopting a parameter similar to Two Shifting Limit as a Dynamic Parameter under paragraph BC2.5.3.1 of the Grid Code?
Please tell us the reasons for your response.

We are in favour of adopting the Two Shifting Limit as a Dynamic Parameter.

Generators need some method of indicating to NGT that there are plant limitations and the TSL is one of these. These may be due to safety issues or the risk of significant plant damage. Making the TSL a formal parameter would give NGT clearer information on plant abilities and will also remove potential BM price distortion and manipulation of MEL values.

Q2. Do you have any views on whether, if adopted, Two Shifting Limit should limit transitions **from** zero (Synchronisations) or transitions **to** zero (De-Synchronisations)? Please tell us the reasons for your response.

The preferred option would be defined as the transition from zero (synchronisations) as the issues regarding limiting factors relate to unit start-up and not the de-synch (assuming that the MNZT parameter has been satisfied).

Q3. If Two Shifting Limit was adopted, do you have any views on the timescales over which it should apply e.g. Operational Day, week, year etc? Please tell us the reasons for your response.

This is pretty much standing data, and as such there seems little value in making it a requirement for this to be submitted on a daily basis. Longer term timescales would seem more appropriate, based on the assumption that any revisions can be submitted as required.

Q4. If adopted, should Two Shifting Limit apply to only those transitions to/from zero that result from Bid-Offer Acceptances, or to all transitions to/from zero i.e. including those as a result of submitted

Physical Notifications and Maximum Import and Export Limits? Please tell us the reasons for your response.

The TSL should apply to all planned starts due to both PNs and BOAs. However, should units trip and require to be resynchronised we would not expect these repeated attempts to re-synchronise to be counted.

Q5. In the interim period (prior to any formal Code changes), should National Grid take into account the Two Shift Limit when issuing Bid-Offer Acceptances? Please tell us the reason for your response.

Yes, due to the aforementioned issues regarding ability of units to undertake multiple two shifts and also due to the possibility of BM price distortion and misleading MEL submissions.

Station Synchronising Interval (SSI) and Station De-Synchronising Interval (SDI)

Q6. Are you in favour of formalising the Station Synchronising Interval and Station De Synchronising Interval parameters under paragraph BC2.5.3.1 of the Grid Code? Please tell us the reasons for your response.

We do not believe that these should be formal parameters.

Unit start-up intervals can be very complex and do not lend themselves to a formal submission. The fundamental problem with these parameters is that there is an assumption that all units in a station are the same and a single value can be applied between all Units.

For example in some stations towns water requirements can set limits between Units, but even that does not set a fixed time between units as the station layout can require the starting interval between Units 1 & 2 to be 1 to 3 hours, whereas between Units 1 & 3 it is 30 to 90 minutes.

Another example is that depending upon how warm the Units are changes the SSI, which again adds to the complexity.

In conclusion, we believe that the current method of indicating synch intervals, together with communication between control rooms and the operational trading desk is the better option.

Q7. Do you have any comments on the proposed definitions for Station Synchronising Interval and Station De-Synchronising Interval as stated in sections 4.2.1 and 4.2.2 of this consultation?

Both definitions refer to BMUs. It may be more prudent to redefine this to allow the values to be stated for individual GTs within a BMU.

Q8. Do you have any views on whether there should be an upper limit on the values of Station Synchronising Interval and Station De-Synchronising Interval and what that upper limit should be?

The SSI should not have an upper limit applied, it needs to be the genuine estimate of required time period and as we have previously stated it could be 3 hours. If a limit of 90 minutes was applied as suggested, then NGT could believe that if they BOAed a unit to start immediately following the synchronisation of an Unit it would be on in 90 minutes, when in reality it would not.

Last Time to Cancel Synch

Q9. Are you in favour of formalising the Last Time to Cancel Sync parameter under paragraph BC2.5.3.1 of the Grid Code? Please tell us the reasons behind your response.

We don't believe that this requires to be a formal parameter and is better suited to communication/negotiation between control rooms and the operational trading desk, as occurs at present.

Q10. Do you have any comments on the proposed definition for Last Time to Cancel Sync as stated in section 5.5 of this consultation?

The definition, leads this value being used to define two separate dynamics when the BMU is desynchronised due to a BOA: NDZ and LTCS.

Q11. Do you have any views on whether there should be an upper limit on the value of Last Time to Cancel Sync and what that upper limit should be?

There should be no upper limit on this value because different types of Unit will have different characteristics. Quite often for coal plant the steam is on its way to the turbine about 120mins before sync and cannot be cancelled without severe consequences for the plant.

Q12. Do you think that the Last Time to Cancel Sync parameter should be used to manage the notice required to re-synchronise a BM Unit which has a non-zero PN, but has been issued Bid-Offer Acceptances to keep it off?

Please tell us the reasons for your answer and any alternative approaches that occur to you.

No. Regardless of whether the unit is off due to a Bid-Offer acceptance or a scheduled de-synch, the station still require the submitted NDZ value to re-synchronise. If a LTCS was submitted, then this value could be significantly shorter than the NDZ. In effect the LTCS becomes the NDZ when the unit is BOA'd off and this would require the LTCS to be submitted at a value equal to NDZ. This would therefore be misleading and present a loss of flexibility to NGT.

Others

Q13. Are there any other parameters that should be formalised in addition to those already covered by this consultation? Please tell us the reason for your response.

Q14. Are there any other comments you would like to make?

The new proposed text in Section 3.2 is

*An updated definition of Two Shifting Limit could be as follows:
"The maximum number of times in any Operational Day that a BM Unit's active power output may transition to zero".*



which attempts to deal with non-synchronous units by only referring to transitions from zero. This does not address that pump-storage units can be synchronised and spinning at zero or machines operating as synchronous condensers, and may inadvertently be included.

A possible alternative is

“The maximum number of times in any Operational Day that a BM Unit can connect to the transmission system.”

Yours sincerely,

Alastair Frew

Seabank Power Ltd's response to the National Grid Industry Consultation:

B/12 Formalising Two Shifting Limit and other parameters.

Q1. Are you in favour of adopting a parameter similar to Two Shifting Limit as a Dynamic Parameter under paragraph BC2.5.3.1 of the Grid Code? Please tell us the reasons for your response.

A1. Yes, a TSL would allow the BM Participant to indicate to National Grid the availability of the BMU to be able to desynchronise (or synchronise)

Q2. Do you have any views on whether, if adopted, Two Shifting Limit should limit transitions **from** zero (Synchronisations) or transitions **to** zero (De-Synchronisations)? Please tell us the reasons for your response.

A2. The TSL should limit transitions from zero, as this would limit the thermal stresses applied to the BMU by limiting the number of occasions the BMU starts; it would also enable the BM Participant, to better predict the running regime in the Operational Day.

Q3. If Two Shifting Limit was adopted, do you have any views on the timescales over which it should apply e.g. Operational Day, week, year etc? Please tell us the reasons for your response.

A3. The TSL should be applied over an Operational Day as per the current arrangements, this appears to work well and we cannot see a reason to lengthen this time.

Q4. If adopted, should Two Shifting Limit apply to only those transitions to/from zero that result from Bid-Offer Acceptances, or to all transitions to/from zero i.e. including those as a result of submitted Physical Notifications and Maximum Import and Export Limits? Please tell us the reasons for your response.

A4. As with other BM data, the TSL should apply to BMU's within the BM.

Q5. In the interim period (prior to any formal Code changes), should National Grid to take into account the Two Shift Limit when issuing Bid-Offer Acceptances? Please tell us the reason for your response.

A5. Yes, for the reasons stated in the previous 4 questions

Q6. Are you in favour of formalising the Station Synchronising Interval and Station De-Synchronising Interval parameters under paragraph BC2.5.3.1 of the Grid Code? Please tell us the reasons for your response.

A6. Yes, any parameters that are used with the BM, should be formalised and adhered too. If (as present) they 'may' be taken into account, this could cause confusion if this is only applied to some BM Participants (and indeed BMU's).

Q7. Do you have any comments on the proposed definitions for Station Synchronising Interval and Station De-Synchronising Interval as stated in sections 4.2.1 and 4.2.2 of this consultation?

A7. Yes, SSI's and SDI's need to vary depending on which BMU synchronises (or desynchronises) first, some BM Participants have BMU's of varying configurations (1+1 CCGT, 2+1 CCGT etc) and using one value of SSI and SDI will not reflect the flexibility of these configurations.

Q8. Do you have any views on whether there should be an upper limit on the values of station Synchronising Interval and Station De-Synchronising Interval and what that upper limit should be?

A8. No Comment

Q9. Are you in favour of formalising the Last Time to Cancel Sync parameter under paragraph BC2.5.3.1 of the Grid Code? Please tell us the reasons behind your response.

A9. Yes, any parameters that are used with the BM, should be formalised and adhered too. If (as present) they 'may' be taken into account, this could cause confusion if this is only applied to some BM Participants (and indeed BMU's).

Q10. Do you have any comments on the proposed definition for Last Time to Cancel Sync as stated in section 5.5 of this consultation?

A10. No Comment

Q11. Do you have any views on whether there should be an upper limit on the value of Last Time to Cancel Sync and what that upper limit should be?

A11. No greater than 89 mins, as this would prove difficult when issuing BOA's (past the wall)

Q12. Do you think that the Last Time to Cancel Sync parameter should be used to manage the notice required to re-synchronise a BM Unit which has a non-zero PN, but has been issued Bid-Offer Acceptances to keep it off? Please tell us the reasons for your answer and any alternative approaches that occur to you.

A12. As we understand it, this is the current method employed by National Grid, however a value less than the submitted BMU NDZ may prove difficult for BM Participants, as the notification to synchronise back to the submitted PN will be smaller.
Would it not be possible to adhere to: if Submitted PN > 0 and BOA = 0, then Last Time to Cancel Sync = NDZ ?

Q13. Are there any other parameters that should be formalised in addition to those already covered by this consultation? Please tell us the reason for your response.

A13. No Comment

Q14. Are there any other comments you would like to make?

A14. No Comment

Q1	Are you in favour of adopting a parameter similar to Two Shifting Limit as a Dynamic Parameter under paragraph BC2.5.3.1 of the Grid Code?	
Answer	No. We are not in favour of adopting a parameter similar to Two shifting Limit as a Dynamic Parameter under BC2.5.3.1.	
Reason	We believe that introducing a formal parameter, limiting the starts or stops of a Gen Set or Power Park Module (PPM) to the System Operator would reduce the transparency on the actions taken by the System Operator and increase the complexity of the BM. This would be detrimental to competition in both generation and supply of electricity. We also believe that it would be very difficult to define a parameter which could be applied to all generation technologies equally and in a non discriminatory manner.	
Q2	Do you have any views on whether, if adopted, Two Shifting Limit should limit transitions from zero (Synchronisations) or transitions to zero (De-Synchronisations)?	
Answer	If adopted the parameter should limit the transitions to zero (stops, a PPM doesn't de-synchronise).	
Reason	Limiting the number of stops is, intrinsically, better for plant life as it reduces the risk of undue thermal and other stresses and shocks which can, over time, increase plant maintenance costs (and the need for more outages) and reduce plant life. Using stops allows the System Operator to despatch plant on when required and gives a measure of the flexibility of running plant	
Q3	If Two Shifting Limit was adopted, do you have any views on the timescales over which it should apply e.g. Operational Day, week, year etc?	
Answer	The Start / Stop limit parameter should only apply over an Operational Day.	
Reason	Setting a timescale other than an Operational Day over which the Start / Stop limit would apply would be very complex and difficult for both the System Operator and stakeholders to manage economically and practically. It could also give rise to unintended consequences in terms of the knock on effect into the next Operational Day.	
Q4	If adopted, should Two Shifting Limit apply to only those transitions to/from zero that result from Bid-Offer Acceptances, or to all transitions to/from zero i.e. including those as a result of submitted Physical Notifications and Maximum Import and Export Limits?	
Answer	The Start / Stop limit parameter should only apply to transactions to/from zero that result from Bid-Offer Acceptances.	
Reason	We believe the System Operator needs to know what flexibility is being made available (by the BSC Party) to them to determine operational strategy and potential reserve capacity within the Operational Day. Using the BOA arrangements is an appropriate way to proceed.	
Q5	In the interim period (prior to any formal Code changes), should National Grid take into account the Two Shift Limit when issuing Bid-Offer Acceptances?	
Answer	No.	
Reason	We believe that no formal Code change is required.	
Q6	Are you in favour of formalising the Station Synchronising Interval and Station De-Synchronising Interval parameters under paragraph BC2.5.3.1 of the Grid Code?	
Answer	Yes. We are in favour of formalising Station Synchronising and De-Synchronising Interval parameters.	
Reason	They are important parameters for managing technical restrictions within a power station, for example, the duty required on auxiliary transformers	

	and auxiliary systems during the run up and run down sequence before Synchronising and De-Synchronising needs to be managed to avoiding overloading of these during sequential starting or stopping. They are also important for environmental reasons to ensure compliance (by the power station) with emissions, including noise consent conditions during Synchronising and De-Synchronising or Stopping of a PPM. In addition the impact on hydraulic conditions upstream and downstream of a hydro power station needs to be managed for the safety of other river users.	
Q7	Do you have any comments on the proposed definitions for Station Synchronising Interval and Station De-Synchronising Interval as stated in sections 4.2.1 and 4.2.2 of this consultation?	
Answer	Operational consent for many wind farms require any noise emissions to stay within pre-determined limits. The definitions should be applicable to all technologies and not just for synchronous plant.	
Q8	Do you have any views on whether there should be an upper limit on the values of Station Synchronising Interval and Station De-Synchronising Interval and what that upper limit should be?	
Answer	The upper limit should be 89 minutes.	
Q9	Are you in favour of formalising the Last Time to Cancel Sync parameter under paragraph BC2.5.3.1 of the Grid Code?	
Answer	Yes. We are in favour of formalising the Last Time to cancel Sync parameter.	
Reason	It is an important parameter for power plant integrity and will give transparency of the flexibility of a Gen Set or PPM to the System Operator and other stakeholders.	
Q10	Do you have any comments on the proposed definition for Last Time to Cancel Sync as stated in section 5.5 of this consultation?	
Answer	The definitions should be applicable to all technologies and not just for synchronous plant. Many renewable BMUs are able to cancel the start within a minute and the definition needs to reflect this flexibility (otherwise it would appear to be discriminatory).	
Q11	Do you have any views on whether there should be an upper limit on the value of Last Time to Cancel Sync and what that upper limit should be?	
Answer	Yes. The upper limit should be one (1) hour.	
Q12	Do you think that the Last Time to Cancel Sync parameter should be used to manage the notice required to re-synchronise a BM Unit which has a non-zero PN, but has been issued Bid-Offer Acceptances to keep it off?	
Answer	No. The NDZ should be used and should be open to re submit when the Bid-Offer Acceptance has been extended beyond the MZT.	
Reason	A power plant is not held at the point where there is no turning back when off as the result of a Bid-Offer Acceptance. The Last Time to Cancel Sync parameter is the no turning back point within the run up sequence of a Generator.	
Q13	Are there any other parameters that should be formalised in addition to those already covered by this consultation?	
Answer	Yes, Consideration should be given to introducing a parameter which reflects the NDZ profile of a Gen Set after shutdown to give the System Operator clearer visibility of the hot, warm or cold NDZ within the Operational Day.	
Q14	Are there any other comments you would like to make?	
Answer	We would like to know what the hierarchy of the logic is for decision making on parameters used to issue BOA's e.g. existing dynamic parameters and if parameters such as 'Last Time to Cancel Sync' are introduced. We would envisage the worst case constraining parameters to be used.	