C16 Consultation Report – Annexes

Annexes

09 February 2012

Contents

About this document

This document forms the Annex to the C16 Consultation Report.

Any Questions?

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Annex 1 – Consultation Document (including original proposed changes to SMAF)

This section contains the consultation document, published on the 23rd December 2011 along with the original proposed changes to the SMAF statement.

Annual Industry Consultation

nationalgrid

System Management Action Flagging Methodology Statement

Published on: 23 December 2011
Responses requested by: 02 February 2012

Executive Summary

In accordance with Standard Condition 16 (C16) of its Electricity Transmission Licence, National Grid is required to conduct an annual review of all licence statements, and if necessary propose changes to the C16 statements.

This consultation proposes that the following changes are made to the System Management Action Flagging Methodology (SMAF) Statement:

- Inclusion of Black Start warming, as a service that will be SO-Flagged
- General document review and update as required

This consultation seeks industry views on the proposed changes to the SMAF Statement and also invites views on any other aspects of the SMAF Statement. The proposed changes are further detailed in Section 2 of this consultation.

National Grid does not propose to make any amendments to other C16 statements as part of this annual review. If changes to other C16 Statements become necessary in due course, National Grid will bring forward a separate consultation in accordance with C16.

National Grid welcomes views on the proposals contained within this document; responses are required by 2nd February 2012. Details on how to make a response can be found in Section 4.

Following receipt of responses to this consultation, National Grid will prepare and submit a report to the Authority by 9th February 2012. This consultation, industry responses and the consultation report will all be published at the link below:

http://www.nationalgrid.com/uk/Electricity/Balancing/consultations/

If you have any questions about this document please contact:

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National Grid

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Contents

1 Introduction

In accordance with Standard Condition 16 (C16) of its Electricity Transmission Licence, National Grid is required to conduct an annual review of all licence statements.

Following a review of the System Management Action Flagging Methodology (SMAF) Statement, several changes are proposed to the document.

The SMAF Statement was introduced following the implementation of BSC Proposal P217A, and identifies a number of balancing services that may be SO-Flagged. A service will be flagged if it has been undertaken for system management reasons. Costs associated with SO-Flagged services are generally removed from cashout calculations.

This consultation seeks industry views on the proposed changes to the SMAF Statement; the changes are set out in Section 2. The proposed changes can only become effective if they are approved by the Authority.

National Grid does not propose to make any amendments to other C16 statements as part of this annual review. If changes to other C16 Statements become necessary in due course, National Grid will bring forward a separate consultation in accordance with C16.

2 Proposed Changes to the SMAF

In areas were there are no Black Start stations running on a regular basis, it may be necessary to warm and run the most economic Black Start stations in order to maintain an effective Black Start capability.

As the purpose of this exercise is to ensure that there is a sufficient level of confidence in Black Start stations to deliver system restoration (if required), the costs associated with Black Start warming and running are considered to be closely linked with the system. As such, it is considered appropriate to include Black Start warming and running as a SO-Flagged service, which will affect how associated costs are treated in the cashout calculations.

The table below shows the text that will be inserted into the SMAF Statement to indentify that Black Start warming will be SO-Flagged.

The general document review makes changes to clarify existing wording and definitions, and update typos.

Changes (aside to format changes) are listed in Table 1 below.

Reference	Change	Comment
Part B Section 3 The balancing services that will be SO-Flagged	**Insert:** <u>Black Start Warming</u> BMUs that are warmed and run to maintain black start capability should be SO-Flagged, i.e. any BM Start-Up instructions and BOAs sent to the BMU in question should be SO-Flagged.	A new paragraph inserted
Complete document	General wording and typo updates	General document revision

Table 1 – Proposed SMAF changes

The proposed changes detailed above are shown in a changed marked version of the SMAF as Appendix A.

3 Consultation Questions

The consultation questions detailed here are also summarised within a response proforma as Appendix B.

Consultation Question 1
Do you agree that the changes proposed to the SMAF, shown in Table 1, have been implemented correctly to the SMAF in Appendix A?

Consultation Question 2
Do you agree that the changes proposed to the SMAF, shown in Table 1 and in Appendix A, should be made?

Consultation Question 3
Do you have any other comments in relation to the changes proposed to the SMAF?

4 Responding

Responses should be submitted by replying to the consultation questions within the response proforma, attached as Appendix B and e-mailing the completed proforma to balancingservices@uk.ngrid.com

If you do not wish any elements of your response to be made publicly available, please mark these as confidential.

Due to the holiday period, the consultation period for this document has been extended from the minimum 28 days to 41 days.

Responses are therefore required by **2nd February 2012**. Following the consultation, a report will be produced and submitted to the Authority within seven days of the consultation close. Due to the timescales for the Authority report, it may not be possible to accept late consultation responses.

It is envisaged that, unless directed otherwise by the Authority, the implementation date for the revised SMAF will be 1st April 2012.

5 Next Steps

Following receipt of responses to this consultation, National Grid will prepare and submit a report to the Authority in accordance with Electricity Transmission Licence Standard Condition C16 paragraph (8). The consultation document, consultation report, and all responses, will be published on National Grid's website:

www.nationalgrid.com/uk/Electricity/Balancing/consultations/

The current version of the subject document referred to in this report can be found at the following link:

www.nationalgrid.com/uk/Electricity/Balancing/transmissionlicensestatements/

Appendix A - Revised SMAF Document

Please see separate document

Appendix B - Consultation Questions

National Grid invites responses to this consultation by 2nd February 2012. The responses to the specific consultation questions (below) or any other aspect of this consultation can be provided by completing the following proforma.

Please return the completed proforma to balancingservices@uk.ngrid.com

Respondent:	
Company Name:	
Does this response contain confidential information? If yes, please specify.	

No	Question	Response (Y/N)	Rationale
1	*Do you agree that the changes proposed to the SMAF, shown in Table 1, have been implemented correctly to the SMAF in Appendix A?*		
2	*Do you agree that the changes proposed to the SMAF, shown in Table 1 and in Appendix A, should be made?*		
3	*Do you have any other comments in relation to the proposed changes to the SMAF?*		

System Management Action

Flagging Methodology Statement

Version Date: 1st April 2012

Deleted: 05th November 2009

Version Control

Date	Version No.	Notes
05.11.09	1.0	Initial version
01.04.12	2.0	Addition of reference to Black Start warming flagging

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The System Management Action Flagging Methodology Statement has been developed by National Grid Electricity Transmission plc (National Grid).

Where National Grid amends the process for flagging balancing services, National Grid will promptly seek to establish a revised Statement incorporating the changes in accordance with paragraphs 8(a) and 8(b) of Standard Condition C16 of the Transmission Licence (the Licence).

Deleted: [paragraphs [8(a)] and [8(b)]]

In the event that it is necessary to modify this Statement in advance of issuing an updated version of this document, then this will be done by issuing a supplement to this Statement.

CONTENTS

PART A: INTRODUCTION

1. Purpose of document

The purpose of this Statement is to set out the means which the licensee will use to identify (using reasonable endeavours) balancing services that are for system management reasons.

In the event that it is necessary to modify this Statement in advance of issuing an updated version of this document, this will be done by issuing a supplement to this Statement.

This Statement refers to a number of definitions contained in each of the Grid Code, the Balancing and Settlement Code, and the Licence. In the event that any of the relevant provisions in the Grid Code, the Balancing and Settlement Code or the Licence are amended, it may become necessary for National Grid to modify this Statement so that it remains consistent with the Grid Code, the Balancing and Settlement Code, and the Licence.

In any event, where National Grid's licence or statutory obligations or the provisions of the Grid Code or Balancing and Settlement Code are considered inconsistent with any part of this Statement, then the relevant licence or statutory obligation or code provision will take precedence.

Unless defined in this Statement, terms used herein shall have the same meanings given to them in the Transmission Licence, the Grid Code and/or the Balancing and Settlement Code as the case may be.

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PART B: Flagging

2. Background to SO-Flagging

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Balancing Settlement Code

From the 5th November 2009, under Section Q 5.3.1 (d) and Section Q 6.3.2 (b) (iii) of the Balancing and Settlement Code, National Grid is required to determine which balancing services should be classified as SO-Flagged.

Deleted: [Section Q 5.3.1 (d)] and [Section Q 6.3.2 (b) (iii)],

To that end, National Grid will determine which balancing services have been taken for system management reasons and will subsequently classify the appropriate services as SO-Flagged.

System Management

System Management means:

1. any balancing service used by National Grid that partially or wholly resolves a transmission constraint;
2. any system-to-system balancing service used by National Grid in respect of electricity flows over an interconnector, to avoid adverse effects arising on the National Electricity Transmission System from significant load profile changes;
3. any system-to-system balancing service used by a Transmission System Operator (TSO) other than National Grid, for the purposes of resolving a system operation issue in a connected transmission system.

Transmission Constraints

Transmission constraints and the processes National Grid employs to resolve them are discussed in Part D of this document. However, in summary, transmission constraint occurs when there is a limit on the ability of the national electricity transmission system, or any part of it, to transmit the power supplied

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onto the national electricity transmission system to the location of demand. Any balancing service taken by National Grid in order to avoid power flow exceeding a limit will be considered as resolving a transmission constraint.

3. The balancing services that will be SO-Flagged

Balancing services are defined in the Procurement Guidelines which National Grid is required to establish in accordance with Standard Condition C16 of the licence. The purpose of the Procurement Guidelines is to set out the kind of balancing services which National Grid may be interested in purchasing in the role of System Operator (SO), together with the mechanism by which National Grid envisages purchasing such balancing services.

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The following balancing services will be assessed to determine which of them were used for system management reasons, and consequently, should be SO-Flagged:

Forward Contracts

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The following forward-trading actions will be assessed in accordance with the System Management Action Flagging Methodology:

- energy related products;
- pre gate balancing transactions (PGBTs); and
- system-to-system services.

Bid-Offer Acceptances

All Bid-Offer Acceptances (BOAs) taken within the Balancing Mechanism (BM) in relation to Balancing Mechanism Units (BMUs) will be considered to determine whether they were used for system management reasons.

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Option Contracts

BM Start-Up option contracts used by National Grid to facilitate access to energy from BMUs that would not have otherwise run and are unable to start up within BM timescales, will be assessed in accordance with the System Management Action Flagging Methodology.

Where National Grid determines that a BM Start-Up option contract has been taken for the purposes of system management, the costs associated will not be included within the Buy Price Adjuster (BPA) of the Balancing Service Adjustment Data (BSAD).

Emergency Instructions

In certain circumstances, National Grid may need to take emergency actions which exceed the bids and offers available to it in the BM in order to maintain the integrity of the transmission network in accordance with BC2.9 of the Grid Code. If such action is taken, National Grid will analyse the action post event and determine the energy profile of the emergency action. National Grid will then determine whether these actions are taken for system management reasons. In instances where emergency instructions have been used for system management reasons National Grid will classify the resulting Acceptances as Emergency Flagged. For the avoidance of doubt, there is no difference in the meaning of system management for emergency instructions.

Emergency Deenergisation Instructions

There is one form of emergency action that will always be classified for system management reasons and will consequentially always be SO-Flagged – emergency deenergisation instructions. Instructions to de-synchronise and deenergise Generating Unit(s) will be issued by National Grid in accordance with Section 5.2 of the CUSC.

However, as such energy volumes associated with emergency deenergisation instructions are administered through the CUSC, and not open to the 'pay as

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bid' approach of the BM, these energy volumes will be provided through BSAD as an unpriced volume.

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System-to-Generator Operational Intertripping

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The system-to-generator operational intertripping service may, in certain circumstances, result in the automatic tripping of Generating Units(s). The contract details associated with a system-to-generator operational intertripping scheme are contained in section 4.2A of the CUSC. This is considered to be a system management service and will consequently be SO-Flagged. However, this service is administered through the CUSC and therefore such energy volumes will be provided through BSAD as unpriced volumes.

Commercial Intertrips

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The commercial intertrip service may, in certain circumstances, result in the automatic tripping of Generating Units(s). The use of such a service will always be for system management reasons and SO-Flagged accordingly. However, the energy volume provided through BSAD will be unpriced as the service is not contracted on a £/MWh basis.

Black Start Warming

BMUs that are warmed and run to maintain black start capability should be SO-Flagged, ie any BM Start-Up instructions and BOAs sent to the BMU in question should be SO-Flagged.

4. Forward trades and Bid Offer Acceptances

There is a distinction between how National Grid will flag balancing services taken in the forward market and those taken in the BM.

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Individual balancing services actions used outside the BM for system management reasons will be SO-Flagged at inception in accordance with the principles set out above. This includes any system-to-system balancing services. Whether such balancing services are SO-Flagged will be contained within the BSAD and submitted in accordance with the BSAD methodology statement.

However, due to the demands of real time power system management, it is not practicable to manage the SO-Flagging of BOAs in the same way. Therefore, in real time, National Grid will identify BMUs that are being used to manage transmission constraints, and any BOAs taken on those units will be automatically SO-Flagged. For the avoidance of doubt, if the use of the BMU has not been assessed as resolving a transmission constraint, any associated BOA will not be SO-Flagged. Whether such balancing services are SO-Flagged will be contained within the Acceptance Data in accordance with Section Q, Paragraph 5.3 of the Balancing Settlement Code.

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PART C: Other Issues

5. Flagging methodology accuracy

National Grid considers the flagging methodology described within this document to be a pragmatic solution that will accurately identify the majority of transmission constraints. However, there may, on occasion, be actions that resolve transmission constraints that are not correctly identified by the System Operator. Conversely there may be instances where National Grid incorrectly identifies an action as resolving a transmission constraint.

Where there has been an incorrect SO-Flag applied to any balancing service taken outside of the BM, National Grid will promptly amend the SO-Flag in accordance with the existing BSAD provisions (section Q, paragraph 6.3 of the Balancing and Settlement Code). However, National Grid will not amend incorrect SO-Flags applied to BOAs.

In order to provide continued confidence to the industry, National Grid will report annually, as a minimum, on the accuracy of the flagging methodology.

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6. Failure of Balancing Mechanism System and backup

There may, under exceptional circumstances, be occasions when National Grid's ability to flag balancing services it has taken for system management reasons will be reduced.

On occasions when the BM system (main system) is unavailable and National Grid is using its back up system, there may be a reduction in the general level of accuracy of National Grid's SO-Flagging. Any loss of accuracy will be due to the increased burden upon National Grid to maintain the integrity of the transmission system, resulting from utilising a back up system with less functionality than the main system.

In addition, in the unlikely event that there is a simultaneous failure of the main system and the back up system, National Grid will not be able to engage in SO-

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Flagging since the loss of both systems would make it impractical to undertake this activity.

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7. Modifications to the methodology statement

National Grid will review the System Management Action Flagging Methodology should there be any significant changes to the information systems used, the processes employed by National Grid to manage transmission constraints, or any other change that in National Grid's view will have an impact on the effectiveness the methodology. National Grid will also review the System Management Action Flagging Methodology should the Authority direct National Grid to do so.

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National Grid will seek to revise this Statement in accordance with paragraph 8 of Standard Condition C16 (Procurement and use of balancing services) of the licence should a modification be required.

PART D: TRANSMISSION CONSTRAINTS

8. Definition of transmission constraint

Any balancing service that partially or wholly resolves a transmission constraint will be classified as a system management action and SO-Flagged.

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A transmission constraint is defined as: any limit on the ability of the national electricity transmission system, or any part of it, to transmit the power supplied onto the national electricity transmission system to the location where the demand for that power is situated, such limit arising as a result of any one or more of::

(a) the need not to exceed the thermal rating of any asset forming part of the national electricity transmission system;

(b) the need to maintain voltages on the national electricity transmission system; and

(c) the need to maintain the transient and dynamic stability of electrical plant, equipment and systems directly or indirectly connected to the national electricity transmission system.

and used by National Grid to operate the national electricity transmission system in accordance with the National Electricity Transmission System Security and Quality of Supply Standard referred to in standard condition C17.

9. Transmission constraint management process

National Grid has determined that the System Management Action Flagging Methodology should be incorporated within National Grid's existing transmission constraint management process. Therefore the following section briefly outlines the transmission constraint process and highlights when SO-Flagging will occur within it. However, it should be noted that the intention is not to provide a definitive description of the transmission constraint process but rather provide a context for the SO-Flagging process. A detailed description of

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the transmission constraint process can be found in National Grid's Balancing Principles Statement.

This process is summarised in Chart A below.

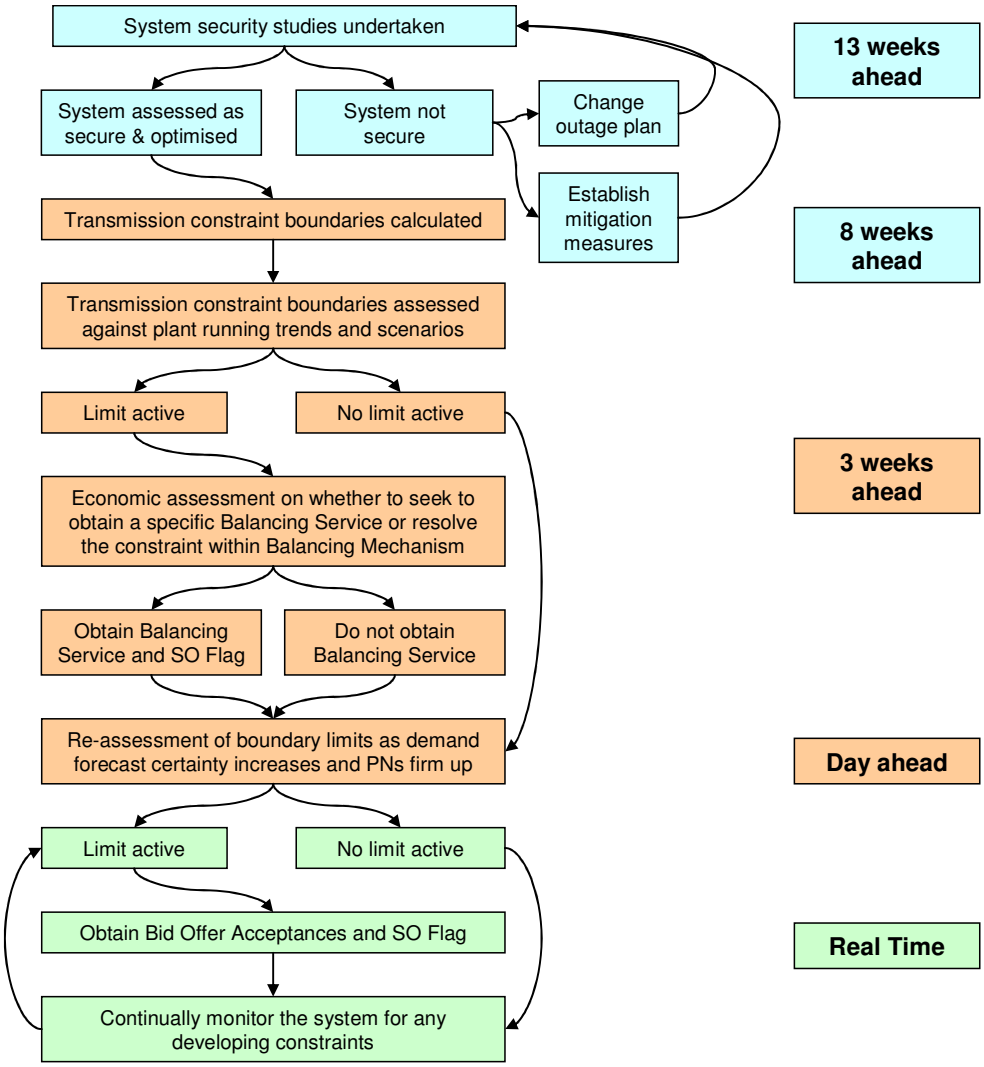

Chart A

10. Transmission constraint management description

The following is a description of the transmission constraint management and flagging process illustrated above.

In "year ahead" timescales, National Grid seeks to minimise transmission constraints through careful planning of transmission outages. Transmission constraints are calculated and optimised as necessary from thirteen (13) weeks ahead, down to day ahead timescales and in pre Gate Closure control phase, with the objective of ensuring system security at the minimum cost while meeting National Grid's system maintenance and construction requirements:

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Step 1 Using National Grid's forecast of demand, BMU availability/running, BMU prices and the transmission outage plan, system security analysis studies are undertaken. These studies involve the use of system analysis models that can determine system voltage, thermal, and stability conditions.

Step 2 From these studies, system security is assessed. If security can not be achieved, the outage plan will be reviewed and revised accordingly.

Step 3 Transmission constraint boundaries will be identified and further studies will be undertaken to calculate the limits of the acceptable power flows across the boundaries in accordance with the GB Security and Quality of Supply Standard.

Step 4 At the day ahead stage, following receipt of the initial Physical Notification data, an economic assessment on whether to obtain a specific balancing service in the forward market, or in the BM is undertaken to deal with any forecast transmission constraints. If it is economic and efficient to obtain such a service in the forward market, the balancing service will be SO-Flagged when it is purchased.

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Control Phase – Pre Gate Closure

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Step 5 National Grid will undertake further security analysis studies as it gains greater certainty as to likely system conditions, through demand forecasts and generator Physical Notifications.

Step 6 The outcome of these studies could result in National Grid making further use of balancing services, through either BM Start-Up or PGBTs. Whether this is appropriate will depend upon the options available to National Grid to resolve the constraint and the most economically efficient choice. In the event that a balancing service is used, the action will be identified as SO-Flagged at the point of purchase.

Control Phase – Real Time

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Step 7 System security is continually monitored in real time through the use of on-line system security analysis studies based on actual system conditions.

Step 8 BMUs offering BOAs that could be purchased should a transmission constraint materialise in real time are identified. National Grid will flag the relevant BMUs.

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Step 10 Any BOAs subsequently purchased on the flagged BMUs will automatically be identified as SO-Flagged.

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Annex 2 – Industry Response to Consultation

This section contains details of the responses received to the consultation. The table below shows the respondents.

Company
IBM (UK) Ltd on behalf of ScottishPower Energy Management Ltd, ScottishPower Generation Ltd and ScottishPower Renewable Energy Ltd.
E.ON
EDF

National Grid invites responses to this consultation by **2nd February 2012**. The responses to the specific consultation questions (below) or any other aspect of this consultation can be provided by completing the following proforma.

Please return the completed proforma to balancingservices@uk.ngrid.com

Respondent:	Man Kwong Liu
Company Name:	IBM (UK) Ltd on behalf of ScottishPower Energy Management Ltd, ScottishPower Generation Ltd and ScottishPower Renewable Energy Ltd.
Does this response contain confidential information? If yes, please specify.	No

No	Question	Response (Y/N)	Rationale
1	*Do you agree that the changes proposed to the SMAF, shown in Table 1, have been implemented correctly to the SMAF in Appendix A?*	Yes	As this is a statement by which the SO 'flags' its actions for the sole purpose of managing the stability of the Grid system (rather than energy management) and that it is clear to us of what it indicates, we therefore agree that they are appropriate.
2	*Do you agree that the changes proposed to the SMAF, shown in Table 1 and in Appendix A, should be made?*	Yes	ScottishPower agrees that Black Start is a 'System' activity and therefore should be 'SO flagged'. The other housekeeping changes appear appropriate.
3	*Do you have any other comments in relation to the proposed changes to the SMAF?*	No	

National Grid invites responses to this consultation by **2nd February 2012**. The responses to the specific consultation questions (below) or any other aspect of this consultation can be provided by completing the following proforma.

Please return the completed proforma to balancingservices@uk.ngrid.com

Respondent:	Esther Sutton
Company Name:	E.ON
Does this response contain confidential information? If yes, please specify.	No

No	Question	Response (Y/N)	Rationale
1	*Do you agree that the changes proposed to the SMAF, shown in Table 1, have been implemented correctly to the SMAF in Appendix A?*	Y	This appears so.
2	*Do you agree that the changes proposed to the SMAF, shown in Table 1 and in Appendix A, should be made?*	Y	
3	*Do you have any other comments in relation to the proposed changes to the SMAF?*	N	

National Grid

Sent to: **balancingservices@uk.ngrid.com**

2 February 2012

System Management Action Flagging Methodology Statement

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, generation from renewable sources, 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 both residential and business users.

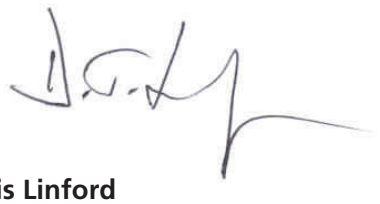
The key points of our response are:

- We support SO-Flagging of the costs of actions taken by the System Operator (SO) to warm or run stations with Black Start capability, provided this is specifically for the purpose of maintaining or testing that capability. Actions taken at such stations for other purposes should not be SO-Flagged unless there is another valid reason.
- We note that this would result in the costs of such actions being usually shared between participants in BSUoS, and not contributing to Imbalance Prices.
- We agree that changes to the System Management Action Flagging Methodology Statement (SMAF) should be made to capture this principle, but suggest changes to the proposed text to improve its accuracy and clarity.
- We make other detailed comments on the accuracy and clarity of the SMAF which, although not directly related to this proposed change, we hope National Grid will be able to consider in the future.

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 my colleague Stefan Leedham on 020 3126 2312, or myself.

I can confirm that this letter and its attachment may be published on National Grid's website.

Yours sincerely,



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Corporate Policy and Regulation Director

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edfenergy.com

Attachment

System Management Action Flagging Methodology Statement

EDF Energy's response to Consultation Questions

Question 1: Do you agree that the changes proposed to the SMAF, shown in Table 1, have been implemented correctly to the SMAF in Appendix A?

Yes, but both should be improved. The text does not accurately capture the principle and intent of the proposed change. See comments below.

Question 2: Do you agree that the changes proposed to the SMAF, shown in Table 1 and in Appendix A, should be made?

Yes in principle, but see the comments below on the detailed text

Black Start capability contracted by National Grid has some similarity in principle with contracted reserve, some of the cost of which **is** reflected in imbalance price through BSAD price adjusters.

However, the circumstances of Black Start actually being required are exceptional and if used contract and meter volume notifications are suspended with all physical volume subject to the single imbalance price. Therefore, the cost is effectively shared rather than being targeted on those in imbalance. Given that the cost of utilisation in earnest is effectively shared (in a Black Start situation); that the other costs of holding the capability are effectively shared (not in BSAD); and that instructions by the SO for testing capability might not be related to prevailing system imbalance, there is an argument that the costs of testing the capability should be likewise shared, considered a "system" service, SO-Flagged.

It can also be argued that all the cost of maintaining the capability of a Black Start station, including warming and running from time to time, could or should be borne by the provider of the service and reflected in the price at which the service is contracted. In that case, the SO would not be required to instruct operation for this purpose; the presumably higher contract cost would be shared (in BSUoS) and the SO-Flagging of such instructions would not be an issue.

For the plant operator, the benefit of giving responsibility for such operation to the SO is presumably that the SO takes on the cost. Hopefully from the point of view of other users this would be reflected in correspondingly reduced Black Start contract capability costs.

For a station that would otherwise rarely be warmed or run, the SO may be able to achieve additional value over that achievable by the owner, for example by optimising operation in conjunction with other system reserve or balancing requirements, compared with the value the owner might get using it for its own purposes. This suggests the SO

might use testing to assist balancing or reserve holding, which in turn suggests the action could find its way into imbalance prices, despite being SO-Flagged.

Although we accept the principle of SO-Flagging for such instructions, we think the detailed wording could be improved:

Table 1 and Page 8 of the proposed revised SMAF document say:

"Black Start Warming
BMUs that are warmed and run to maintain black start capability should be SO Flagged, i.e. any BM Start-Up instructions and BOAs sent to the BMU in question should be SO-Flagged."

Although particular BM Units may be identified at certain times as being ones on which any action is to be flagged, it is not BMUs themselves that are SO-Flagged (see step 8 on page 15). Instructions to BMUs do not include SO-Flag information. It is the actions requested by the SO and reported in BSAD that might be flagged. In the case of BM Start-Up instructions, the "option fee" component might or might not be flagged. If it is SO-Flagged, the BSAD methodology says it will not be included in the Buy Price Adjuster (BPA) calculation, and it is not clear whether it would be reported at all. In the case of subsequent energy actions arising from a BM Start-Up instruction, these will presumably be reported, whether SO-Flagged or not. This text should be clarified, and should specify whether or how the SO-Flag for the actions associated with a BM Start-Up would be reported.

Also, there could conceivably be circumstances where plant could be warmed for the purpose of testing Black Start capability but is subsequently utilised for normal balancing, in which case the cost of the normal balancing action should not be SO-Flagged. The text should be clear that only actions specifically to maintain black start capability should be SO-Flagged, and that a normal balancing instruction following warming-only for black start capability should not be SO-Flagged.

Question 3: Do you have any other comments in relation to the changes proposed to the SMAF?

On page 7 of the change marked text: "There is one form of emergency action that will always be classified for system management reasons and will consequentially always be SO-Flagged –
emergency deenergisation instructions." Suggest "…classified as being for system management…" instead of "… classified for system management reasons…"

Other detailed comments on the text of the SMAF document

We have other detailed comments on the text of the SMAF:

Page 5: "However, in summary, transmission constraint occurs when there is a limit on the ability of the national electricity transmission system, or any part of it, to transmit the

power supplied onto the national electricity transmission system to the location of demand."

We think it would be more accurate to say "… when there is a limit on the ability of the national transmission system to transmit the power that participants wish to deliver to, or offtake from, the system at particular locations". This avoids an interpretation that a constraint is a limit on the ability of the system to accommodate consumer demand.

Page 6: "All Bid-Offer Acceptances (BOAs) taken within the Balancing Mechanism (BM) in relation to Balancing Mechanism Units (BMUs) will be considered to determine whether they were used for system management reasons"
Comma required after "considered".

Page 7: "costs associated" should be "associated costs". Should this be "associated option fee costs" to distinguish from total costs?

Page 7/8: "emergency instructions", "emergency deenergisation instruction", "system to generator operational intertripping" are defined terms under the CUSC and Grid Code: should they be capitalised" like other defined terms?

Page 9: "Whether such balancing services are SO-Flagged will be contained within the BSAD and submitted in accordance with the BSAD methodology statement."
The sentence could be misinterpreted to suggest that the determination of the flag could be made in the BSAD methodology. This interpretation would be avoided if the sentence were to say "Information on whether or not such balancing services have been SO-Flagged …"
Our understanding is that the SMAF is intended to describe the criteria for whether or not actions will be SO-Flagged, and the BSAD is intended to describe how actions and flags are reported, specifically for use as adjustments in the determination of imbalance prices under the BSC.

Page 12: "A transmission constraint is defined as: any limit on the ability of the national electricity transmission system, or any part of it, to transmit the power supplied onto the national electricity transmission system to the location where the demand for that power is situated, such limit arising as a result of any one or more of:: "

As for the comment above on the meaning of "transmission constraint", we don't think this describes transmission constraints well. It suggests that power is supplied onto the system, but might not be able to be transmitted to the demand for it because of system limitations. Because electricity cannot easily be stored, and in any case is not stored on the transmission system itself, this is not correct. We think there are two types of electricity transmission constraint:

1. The transmission system simply cannot accommodate the demand for electricity from it, regardless of where electricity is delivered to it. The system is designed to avoid this absolute limit, which would result in reasonable demand not being met. This is not the usual meaning of a constraint. Demand Control is used in the rare situation where, for whatever reason, the transmission system is unable to support demand on

it, as well as the separate situation of insufficient generation to meet demand. But historically Demand Control is not in itself usually considered a constraint action.

2. The transmission system cannot accommodate the preferred delivery and offtake flows, and their location, of its individual users together with the preferred balancing actions of the SO, but can accommodate demand by means of a different mix of delivery and offtake flows and their location. This is the usual form of a constraint, where preferred delivery flows, and to a lesser extent offtake flows, might have to be varied to meet constraints on particular parts of the system in order to meet demand using a different pattern of flows.

This could be captured by a different definition:

> "A transmission constraint is defined as: any limit on the ability of the national electricity transmission system, or any part of it, to transmit the preferred delivery and offtake flows of its users at particular locations and the preferred balancing actions of the System Operator. A different mix of delivery and offtake flows and their location, managed by the System Operator, can usually alleviate such constraints. Such a limit can arise as a result of one or more of: …"

EDF Energy
February 2012

Annex 3 – Revisions to proposed changes to SMAF Statement (Post Consultation)

This section shows the post-consultation, change marked SMAF Statement.

System Management Action

Flagging Methodology Statement

Version Date: 1st April 2012

Version Control

Date	Version No.	Notes
05.11.09	**1.0**	**Initial version**
01.04.12	**2.0**	**Addition of reference to Black Start warming flagging**

The System Management Action Flagging Methodology Statement has been developed by National Grid Electricity Transmission plc (National Grid).

Where National Grid amends the process for flagging balancing services, National Grid will promptly seek to establish a revised Statement incorporating the changes in accordance with paragraphs 8(a) and 8(b) of Standard Condition C16 of the Transmission Licence (the Licence).

In the event that it is necessary to modify this Statement in advance of issuing an updated version of this document, then this will be done by issuing a supplement to this Statement.

CONTENTS

PART A: INTRODUCTION

1. Purpose of document

The purpose of this Statement is to set out the means which the licensee will use to identify (using reasonable endeavours) balancing services that are for system management reasons.

In the event that it is necessary to modify this Statement in advance of issuing an updated version of this document, this will be done by issuing a supplement to this Statement.

This Statement refers to a number of definitions contained in each of the Grid Code, the Balancing and Settlement Code, and the Licence. In the event that any of the relevant provisions in the Grid Code, the Balancing and Settlement Code or the Licence are amended, it may become necessary for National Grid to modify this Statement so that it remains consistent with the Grid Code, the Balancing and Settlement Code, and the Licence.

In any event, where National Grid's licence or statutory obligations or the provisions of the Grid Code or Balancing and Settlement Code are considered inconsistent with any part of this Statement, then the relevant licence or statutory obligation or code provision will take precedence.

Unless defined in this Statement, terms used herein shall have the same meanings given to them in the Transmission Licence, the Grid Code and/or the Balancing and Settlement Code as the case may be.

PART B: Flagging

2. Background to SO-Flagging

Balancing Settlement Code

From the 5th November 2009, under Section Q 5.3.1 (d) and Section Q 6.3.2 (b) (iii) of the Balancing and Settlement Code, National Grid is required to determine which balancing services should be classified as SO-Flagged.

To that end, National Grid will determine which balancing services have been taken for system management reasons and will subsequently classify the appropriate services as SO-Flagged.

System Management

System Management means:

1. any balancing service used by National Grid that partially or wholly resolves a transmission constraint;
2. any system-to-system balancing service used by National Grid in respect of electricity flows over an interconnector, to avoid adverse effects arising on the National Electricity Transmission System from significant load profile changes;
3. any system-to-system balancing service used by a Transmission System Operator (TSO) other than National Grid, for the purposes of resolving a system operation issue in a connected transmission system.

Transmission Constraints

Transmission constraints and the processes National Grid employs to resolve them are discussed in Part D of this document. However, in summary, transmission constraint occurs when there is a limit on the ability of the national electricity transmission system, or any part of it, to transmit the power supplied

onto the national electricity transmission system to the location of demand. Any balancing service taken by National Grid in order to avoid power flow exceeding a limit will be considered as resolving a transmission constraint.

3. The balancing services that will be SO-Flagged

Balancing services are defined in the Procurement Guidelines which National Grid is required to establish in accordance with Standard Condition C16 of the licence. The purpose of the Procurement Guidelines is to set out the kind of balancing services which National Grid may be interested in purchasing in the role of System Operator (SO), together with the mechanism by which National Grid envisages purchasing such balancing services.

The following balancing services will be assessed to determine which of them were used for system management reasons, and consequently, should be SO-Flagged:

Forward Contracts

The following forward-trading actions will be assessed in accordance with the System Management Action Flagging Methodology:

- energy related products;
- pre gate balancing transactions (PGBTs); and
- system-to-system services.

Bid-Offer Acceptances

All Bid-Offer Acceptances (BOAs) taken within the Balancing Mechanism (BM) in relation to Balancing Mechanism Units (BMUs) will be considered, to determine whether they were used for system management reasons.

Option Contracts

BM Start-Up option contracts used by National Grid to facilitate access to energy from BMUs that would not have otherwise run and are unable to start up within BM timescales, will be assessed in accordance with the System Management Action Flagging Methodology.

Where National Grid determines that a BM Start-Up option contract has been taken for the purposes of system management, the ~~costs~~ associated costs will not be included within the Buy Price Adjuster (BPA) of the Balancing Service Adjustment Data (BSAD).

Emergency Instructions

In certain circumstances, National Grid may need to take emergency actions which exceed the bids and offers available to it in the BM in order to maintain the integrity of the transmission network in accordance with BC2.9 of the Grid Code. If such action is taken, National Grid will analyse the action post event and determine the energy profile of the emergency action. National Grid will then determine whether these actions are taken for system management reasons. In instances where ~~emergency instructions~~ Emergency Instructions have been used for system management reasons National Grid will classify the resulting Acceptances as Emergency Flagged. For the avoidance of doubt, there is no difference in the meaning of system management for ~~emergency instructions~~Emergency Instructions.

Emergency Deenergisation Instructions

There is one form of emergency action that will always be classified as being for system management reasons and will consequentially always be SO-Flagged – ~~emergency deenergisation instructions~~Emergency Deenergisation Instructions. Instructions to de-synchronise and deenergise Generating Unit(s) will be issued by National Grid in accordance with Section 5.2 of the CUSC.

However, as such energy volumes associated with ~~emergency deenergisation instructions~~ Emergency Deenergisation Instructions are administered through

the CUSC, and not open to the 'pay as bid' approach of the BM, these energy volumes will be provided through BSAD as an unpriced volume.

System to Generator Operational Intertripping

The ~~system-to-generator operational interipping~~ System to Generator Operational Intertripping service may, in certain circumstances, result in the automatic tripping of Generating Units(s). The contract details associated with a System to Generator Operational Intertripping ~~system-to-generator operational intertripping~~ scheme are contained in section 4.2A of the CUSC. This is considered to be a system management service and will consequently be SO-Flagged. However, this service is administered through the CUSC and therefore such energy volumes will be provided through BSAD as unpriced volumes.

Commercial Intertrips

The commercial intertrip service may, in certain circumstances, result in the automatic tripping of Generating Units(s). The use of such a service will always be for system management reasons and SO-Flagged accordingly. However, the energy volume provided through BSAD will be unpriced as the service is not contracted on a £/MWh basis.

Black Start Warming

BOAs issued to BMUs that are warmed and run to maintain ~~b~~Black ~~s~~Start capability should be SO-Flagged. For the avoidance of doubt, all~~, i.e. any~~ BM Start-Up instructions including, instructions associated with Black Start warming are accounted for within the Balancing Services Adjustment Data (BSAD) Methodology Statement. ~~and BOAs sent to the BMU in question should be SO-Flagged.~~

4. Forward trades and Bid Offer Acceptances

There is a distinction between how National Grid will flag balancing services taken in the forward market and those taken in the BM.

Individual balancing services actions used outside the BM for system management reasons will be SO-Flagged at inception in accordance with the principles set out above. This includes any system-to-system balancing services. Information on ~~W~~whether or not such balancing services have been ~~are~~ SO-Flagged will be contained within the BSAD and submitted in accordance with the BSAD methodology statement.

However, due to the demands of real time power system management, it is not practicable to manage the SO-Flagging of BOAs in the same way. Therefore, in real time, National Grid will identify BMUs that are being used to manage transmission constraints, and any BOAs taken on those units will be automatically SO-Flagged. For the avoidance of doubt, if the use of the BMU has not been assessed as resolving a transmission constraint, any associated BOA will not be SO-Flagged. Whether such balancing services are SO-Flagged will be contained within the Acceptance Data in accordance with Section Q, Paragraph 5.3 of the Balancing Settlement Code.

PART C: Other Issues

5. Flagging methodology accuracy

National Grid considers the flagging methodology described within this document to be a pragmatic solution that will accurately identify the majority of transmission constraints. However, there may, on occasion, be actions that resolve transmission constraints that are not correctly identified by the System Operator. Conversely there may be instances where National Grid incorrectly identifies an action as resolving a transmission constraint.

Where there has been an incorrect SO-Flag applied to any balancing service taken outside of the BM, National Grid will promptly amend the SO-Flag in accordance with the existing BSAD provisions (section Q, paragraph 6.3 of the Balancing and Settlement Code). However, National Grid will not amend incorrect SO-Flags applied to BOAs.

In order to provide continued confidence to the industry, National Grid will report annually, as a minimum, on the accuracy of the flagging methodology.

6. Failure of Balancing Mechanism System and backup

There may, under exceptional circumstances, be occasions when National Grid's ability to flag balancing services it has taken for system management reasons will be reduced.

On occasions when the BM system (main system) is unavailable and National Grid is using its back up system, there may be a reduction in the general level of accuracy of National Grid's SO-Flagging. Any loss of accuracy will be due to the increased burden upon National Grid to maintain the integrity of the transmission system, resulting from utilising a back up system with less functionality than the main system.

In addition, in the unlikely event that there is a simultaneous failure of the main system and the back up system, National Grid will not be able to engage in SO-

Flagging since the loss of both systems would make it impractical to undertake this activity.

7. Modifications to the methodology statement

National Grid will review the System Management Action Flagging Methodology should there be any significant changes to the information systems used, the processes employed by National Grid to manage transmission constraints, or any other change that in National Grid's view will have an impact on the effectiveness the methodology. National Grid will also review the System Management Action Flagging Methodology should the Authority direct National Grid to do so.

National Grid will seek to revise this Statement in accordance with paragraph 8 of Standard Condition C16 (Procurement and use of balancing services) of the licence should a modification be required.

PART D: TRANSMISSION CONSTRAINTS

8. Definition of transmission constraint

Any balancing service that partially or wholly resolves a transmission constraint will be classified as a system management action and SO-Flagged.

A transmission constraint is defined as: any limit on the ability of the national electricity transmission system, or any part of it, to transmit the power supplied onto the national electricity transmission system to the location where the demand for that power is situated, such limit arising as a result of any one or more of::

(a) the need not to exceed the thermal rating of any asset forming part of the national electricity transmission system;

(b) the need to maintain voltages on the national electricity transmission system; and

(c) the need to maintain the transient and dynamic stability of electrical plant, equipment and systems directly or indirectly connected to the national electricity transmission system.

and used by National Grid to operate the national electricity transmission system in accordance with the National Electricity Transmission System Security and Quality of Supply Standard referred to in standard condition C17.

9. Transmission constraint management process

National Grid has determined that the System Management Action Flagging Methodology should be incorporated within National Grid's existing transmission constraint management process. Therefore the following section briefly outlines the transmission constraint process and highlights when SO-Flagging will occur within it. However, it should be noted that the intention is not to provide a definitive description of the transmission constraint process but rather provide a context for the SO-Flagging process. A detailed description of

the transmission constraint process can be found in National Grid's Balancing Principles Statement.

This process is summarised in Chart A below.

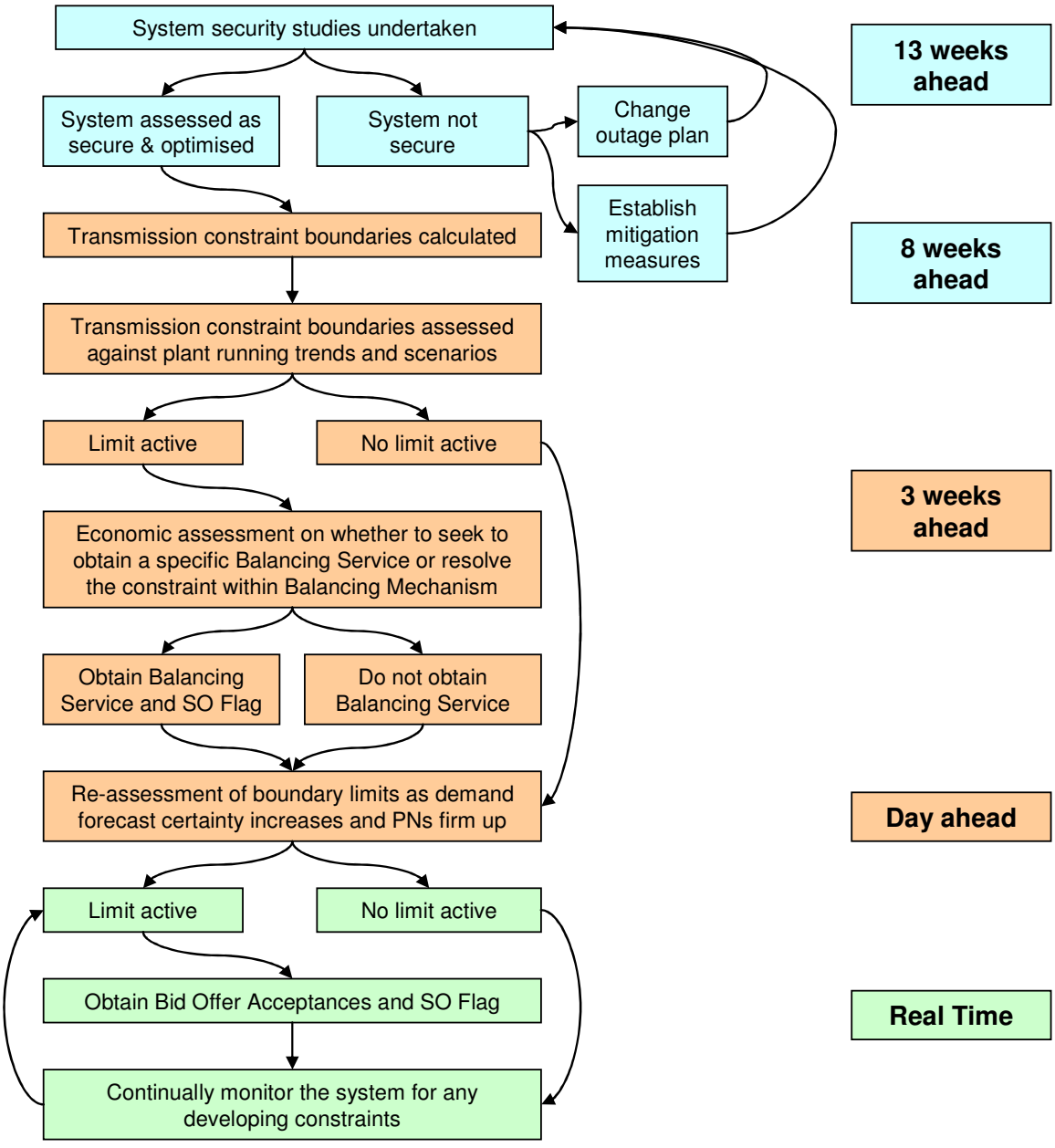

Chart A

10. Transmission constraint management description

The following is a description of the transmission constraint management and flagging process illustrated above.

In “year ahead” timescales, National Grid seeks to minimise transmission constraints through careful planning of transmission outages. Transmission constraints are calculated and optimised as necessary from thirteen (13) weeks ahead, down to day ahead timescales and in pre Gate Closure control phase, with the objective of ensuring system security at the minimum cost while meeting National Grid’s system maintenance and construction requirements:

Step 1 Using National Grid’s forecast of demand, BMU availability/running, BMU prices and the transmission outage plan, system security analysis studies are undertaken. These studies involve the use of system analysis models that can determine system voltage, thermal, and stability conditions.

Step 2 From these studies, system security is assessed. If security can not be achieved, the outage plan will be reviewed and revised accordingly.

Step 3 Transmission constraint boundaries will be identified and further studies will be undertaken to calculate the limits of the acceptable power flows across the boundaries in accordance with the GB Security and Quality of Supply Standard.

Step 4 At the day ahead stage, following receipt of the initial Physical Notification data, an economic assessment on whether to obtain a specific balancing service in the forward market, or in the BM is undertaken to deal with any forecast transmission constraints. If it is economic and efficient to obtain such a service in the forward market, the balancing service will be SO-Flagged when it is purchased.

Control Phase – Pre Gate Closure

Step 5 National Grid will undertake further security analysis studies as it gains greater certainty as to likely system conditions, through demand forecasts and generator Physical Notifications.

Step 6 The outcome of these studies could result in National Grid making further use of balancing services, through either BM Start-Up or PGBTs. Whether this is appropriate will depend upon the options available to National Grid to resolve the constraint and the most economically efficient choice. In the event that a balancing service is used, the action will be identified as SO-Flagged at the point of purchase.

Control Phase – Real Time

Step 7 System security is continually monitored in real time through the use of on-line system security analysis studies based on actual system conditions.

Step 8 BMUs offering BOAs that could be purchased should a transmission constraint materialise in real time are identified. National Grid will flag the relevant BMUs.

Step 10 Any BOAs subsequently purchased on the flagged BMUs will automatically be identified as SO-Flagged.