

What stage is this document in the process?

- 01** Initial Written Assessment
- 02 Definition Procedure
- 03 Assessment Procedure
- 04 Report Phase

## Stage 01: Initial Written Assessment

# P276 'Introduce an additional trigger/threshold for suspending the market in the event of a Partial Shutdown'

Currently, the BSC suspends normal market operations if National Grid notifies Parties that a Partial Shutdown of the Transmission System has occurred. P276 proposes to introduce an additional trigger or threshold, so that the BSC only suspends normal market operations if there is a Partial Shutdown and this additional trigger/threshold is met.

This will avoid automatically suspending the market following any small, localised shutdowns for which market suspension would be disproportionate.



ELEXON recommends:

A 5-month Assessment Procedure by a Workgroup (including a proposed 15WD consultation period of 13/01/12 – 03/02/12)

High Impact:



- All BSC Trading Parties
- Notification Agents (ECVNAs and MVRNAs)
- National Grid
- ELEXON
- BSC Panel



Low Impact:

- BSC Agents

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### Any questions?

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## About This Document:

This document is an Initial Written Assessment (IWA), which ELEXON will present to the BSC Panel on 13 October 2011. The Panel will consider the recommendations and will agree how to progress P276.

You can also find further information in:

- Attachment A – P276 Modification Proposal; and
- Attachment B – [Issue 42 Report](#).

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## What is a Black Start?

A **Black Start**, as defined in the Grid Code, is a recovery process for restoring electricity on the Transmission System.

The majority of Power Stations need electricity from the Transmission System to start up and maintain their generators. If the Transmission System shuts down, these Power Stations will be unable to keep their generators running and will stop producing electricity – resulting in blackouts as Suppliers become unable to supply their customers. Certain Power Stations (defined in the Grid Code as Black Start Stations) have contracts with National Grid (NGET) as the Transmission Company to initiate or assist a Black Start if the Transmission System collapses. These Power Stations **have a 'Black Start Capability'** in that they do not require an external source of energy to produce electricity, and so they can be used to start larger generators and create small 'islands' of generation throughout the country. **These 'islands' are gradually connected to each other until the Transmission System is fully energised.**

Operating Code (OC) 9 of the Grid Code defines two types of Black Start situation: a **Total Shutdown** (where generation has ceased in the whole Transmission System) or a **Partial Shutdown** (where generation has ceased in only part of the Transmission System).

## What happens under the BSC if there is a Black Start?

Section G of the BSC automatically suspends normal BSC market operations in the event of a Black Start situation. This includes suspending the operation of the Balancing Mechanism (including the submission of Bids and Offers), the notification of contract volumes and the calculation of energy indebtedness (i.e. credit positions). In this situation, a single Imbalance Price applies. The Lead Parties of any BM Units to which National Grid has given **Black Start instructions** under the Grid Code are also entitled to compensation under the BSC.

The BSC's current trigger for suspending the market is the notification by National Grid to Parties that either a Total Shutdown or a Partial Shutdown, as defined in the Grid Code, has occurred.

## What is the issue?

Section G of the BSC automatically suspends the market when there is a Partial Shutdown. **The Grid Code's definition of Partial Shutdown could include small, localised shutdowns** for which suspending the market (with the resulting disruption to BSC market participants) would be a disproportionate response. The BSC rules could therefore make National Grid reluctant to issue Black Start instructions during localised shutdowns, even if this is the best/quickest way of restoring supply.

The BSC's [P231](#) Workgroup originally raised this issue in 2009, and the [Standing Issue 42](#) Group subsequently considered it further in 2011. The BSC Panel and Grid Code Review Panel have also noted the issue.

You can find further background, including a more detailed description of the issue, in:

- Attachment A – P276 Modification Proposal; and
- Attachment B – [Issue 42 Report](#).

## What is...?

### A Black Start?

*'The procedure necessary for a recovery from a Total Shutdown or Partial Shutdown.'* (Grid Code Glossary & Definitions).

### A Total Shutdown?

*'A "Total Shutdown" is the situation existing when all generation has ceased and there is no electricity supply from External Interconnections. Therefore, the Total System has shutdown with the result that it is not possible for the Total System to be brought back to function again without NGET's directions relating to a Black Start.'* (Grid Code OC9.4.1).

### A Partial Shutdown?

*'A "Partial Shutdown" is the same as a Total Shutdown except that all generation has ceased in a separate part of the Total System and there is no electricity supply from External Interconnections or other parts of the Total System to that part of the Total System. Therefore, that part of the Total System is shutdown with the result that it is not possible for that part of the Total System to begin to function again without NGET's directions relating to a Black Start.'* (Grid Code OC9.4.2).

### A Black Start instruction?

Grid Code OC9.4.7 lists the instructions that National Grid can issue during a Black Start. These include instructions to Black Start Stations, as well as other participants.

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### What solution does P276 suggest?

P276 proposes to add an additional trigger or threshold into Section G of the BSC, so that the BSC only suspends normal market operations if there is a Partial Shutdown and this additional trigger/threshold is met.

The Issue 42 Group recommended this solution, and you can find further details in:

- Attachment B – [Issue 42 Report](#).

The Proposer believes that this solution will better facilitate the achievement of:

- **Applicable BSC Objective (b)**, by enabling National Grid to operate the Transmission System in the most efficient manner without being constrained by concerns about triggering market suspension;
- **Applicable BSC Objective (c)**, by ensuring that Parties are not exposed to the disruption of market suspension in situations where this disruption would be greater than that caused by not suspending the market; and
- **Applicable BSC Objective (d)**, by avoiding the need to suspend normal balancing and Settlement operations (and the effort incurred in restoring these post-event) except where justified by the materiality of the shutdown.

### What are the Applicable BSC Objectives?

- (a) The efficient discharge by the Transmission Company of the obligations imposed upon it by the Transmission Licence
- (b) The efficient, economic and co-ordinated operation of the National Electricity Transmission System
- (c) Promoting effective competition in the generation and supply of electricity and (so far as consistent therewith) promoting such competition in the sale and purchase of electricity
- (d) Promoting efficiency in the implementation of the balancing and settlement arrangements

## 3 Things to Consider

In this section we highlight areas which we believe the Panel should consider when deciding how to progress this Modification Proposal. If P276 goes into the Assessment Procedure, then we recommend that the areas below form the basis of the Workgroup's Terms of Reference.

### What should the trigger/threshold be?

The Proposer notes that the Issue 42 Group discussed a number of potential BSC triggers/thresholds, but did not have a strong preference between them. The Group recommended that the Workgroup for any resulting Modification Proposal should carry out further analysis in this area.

The Proposer therefore requests that a P276 Workgroup considers this area further to help the Proposer decide what trigger/threshold to apply under the Proposed Modification. It will also be open to any Workgroup to develop a different trigger/threshold as an Alternative Modification if it believes that this would better facilitate the Applicable BSC Objectives.

The Proposer agrees with the Issue 42 Group that any trigger/threshold should be:

- Based on information which is quickly available to National Grid in real time; and
- **'Hard-wired', so that** market participants have certainty of the situation.

The Proposer also agrees with the Issue 42 Group that the key area for assessment will be deciding how to determine the point at which a shutdown is significant enough to necessitate market suspension. The Issue 42 Group suggested that a Modification Proposal Workgroup could analyse the cash-flow disruption of suspending, versus continuing, the market to help it make this determination.

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## What compensation arrangements (if any) should apply?

The Proposer notes that members of the Issue 42 Group had different views on whether participants should be able to claim compensation under the BSC if they are affected by a **'localised' Partial Shutdown in which the market is not suspended**.

The Issue 42 Group noted that the aim of any compensation arrangements would be to hold affected Parties neutral to the event. It considered that compensation could potentially cover:

- Generators who are issued with Black Start instructions by National Grid;
- Other generators in the affected locality who are prevented from generating by the incident; and/or
- Suppliers in the affected locality who lose demand as a result of the incident.

The Group suggested that a starting point for discussion could be **the BSC's existing claims** process for Black Start situations in which the market is suspended.<sup>1</sup> It noted that these current compensation arrangements are based on the application of a single imbalance price during market suspension. It considered that they may therefore need amending for situations where Black Start instructions are issued but the market is not suspended, and in which dual cash-out prices continue to apply.

However, Issue 42 members had different views on:

- How to apply any compensation;
- The practicalities/appropriateness of applying compensation to Suppliers; and
- Whether applying compensation under the BSC to generators who do not receive Black Start instructions (but are prevented from generating) would duplicate compensation arrangements under other codes, such as the Connection and Use of System Code (CUSC).

You can find more details, including members' full views, in:

- Attachment B – [Issue 42 Report](#).

The Proposer intends that P276 should apply compensation only to generators who receive a Black Start instruction during a Partial Shutdown in which the market is not suspended. The Proposer considers that compensation for any other participants affected by shutdowns in which the market is not suspended (not all of which will necessarily constitute a Partial Shutdown<sup>2</sup>) is a broader issue outside the scope of P276. However, the Proposer notes that it is open to any Workgroup to consider different compensation arrangements as part of an Alternative Modification, providing that these meet the defect identified by P276.

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<sup>1</sup> Under the existing arrangements, a Party whose BM Unit receives a 'black start instruction' from the Transmission Company (as defined in BSC G3.3) can claim Avoidable Costs through a post-event claims process managed by the Panel. The Panel in practice delegates this responsibility to a Claims Committee under BSC Procedure (BSCP) 201 'Black Start and Fuel Security Contingency Provisions and Claims Processes'.

<sup>2</sup> The London blackout of August 2003 is an example of a localised shutdown of part of the Transmission System in which the market was not suspended. This incident did not constitute a Partial Shutdown under the Grid Code, as no Black Start instructions were issued.

## What is the impact (if any) on the Grid Code?

The P276 solution will require the BSC to be able to distinguish between two different scenarios:

- A Partial Shutdown in which the market is suspended because the additional BSC trigger/threshold is met (to which the existing compensation arrangements will continue to apply); and
- A Partial Shutdown in which the market is not suspended because the additional BSC trigger/threshold is not met (to which any new P276 compensation arrangements will apply).

The Issue 42 Group considered that it is open for further discussion whether the second category of event should still be called a Partial Shutdown under the Grid Code, or whether **a new Grid Code definition of 'Local Shutdown' is needed. However, the Group agreed** that the trigger/threshold for suspending the market should still be in the BSC and not the Grid Code, as it directly affects BSC market participants. The Group agreed that the Workgroup for any BSC Modification Proposal should identify the consequential Grid Code impact (if any) during its assessment of the appropriate BSC trigger/threshold. The Proposer notes this potential impact in the Modification Proposal form.

## 4 Proposed Progression

### What are the recommended next steps?

#### **ELEXON recommends that a Workgroup carries out further assessment of P276.**

The proposed solution is well-defined; therefore we are not recommending a Definition Procedure. However, we believe the proposal would benefit from further assessment by a Workgroup. In the Modification Proposal, the Proposer invites a Workgroup to consider certain areas further (such as the appropriate new BSC trigger/threshold) to help the Proposer develop the detail of their solution. The Workgroup will also need to confirm the extent of the impacts on BSC participants, processes and documentation.

The Proposer is not requesting that P276 is progressed as a Self-Governance Modification Proposal. We agree that P276 does not meet the criteria for Self-Governance because (as outlined in Sections 1 and 2) any decision to suspend or not suspend normal BSC market operations will materially impact the operation of the Transmission System, competition and the efficiency of the BSC arrangements. We agree with the Proposer that P276 has no interaction with any ongoing Significant Code Reviews (SCRs).



### What are the Self-Governance Criteria?

A Modification Proposal that, if implemented:

a) is unlikely to have a material effect on:

i) existing or future electricity consumers; and

ii) competition in the generation, distribution or supply of electricity or any commercial activities connected with the generation, distribution, or supply of electricity; and

iii) the operation of the national electricity transmission system; and

iv) matters relating to sustainable development, safety or security of supply, or the management of market or network emergencies; and

v) the Code's governance procedures or modification procedures, and

b) is unlikely to discriminate between different classes of Parties.

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## Workgroup Terms of Reference

We recommend that a Workgroup considers the following areas:

### P276 Terms of Reference

#### **Trigger/threshold:**

- What is the appropriate BSC trigger/threshold for suspending the market following a Partial Shutdown?
- How big/severe should a shutdown be before the market is suspended and why? (this may require analysis – e.g. of the cash-flow disruption of suspending, versus continuing, the market).

#### **Compensation arrangements:**

- What BSC arrangements, if any, are required to compensate the following participants following a Partial Shutdown in which the market is not suspended?
  - Generators who receive Black Start instructions from National Grid;
  - Other generators in the affected area who are prevented from generating by the incident; and
  - Suppliers in the affected area who lose demand as a result of the incident. (Development of some of these arrangements could require an Alternative Modification).
- How would any BSC compensation interact with Imbalance Charges and with compensation arrangements under other codes (e.g. in the CUSC)?

#### **Grid Code impact:**

- Should a small, localised shutdown in which the market is not suspended still be called a Partial Shutdown under the Grid Code?
- **Is a new Grid Code definition of 'Local Shutdown' needed?**
- Is there any other impact on the Grid Code?

## Timetable

### **We recommend that P276 undergoes a 5-month Assessment Procedure.**

We believe that the Workgroup will need to undertake the activities shown on the following page. These include undertaking analysis to determine the appropriate trigger/threshold, working up any compensation arrangements and undertaking a 15 Working Day (WD) industry consultation.

In isolation of any other changes, we believe that the Group could complete these activities in 4 months. However, given the number of other Modification Proposals in progress, we believe that a 5-month assessment for P276 is more appropriate to help the industry manage its workload and to avoid issuing a consultation over the Christmas period. The industry has been aware of the issue which P276 identifies for a number of years. It is unlikely to require system changes or implementation in a BSC Release, and therefore its progression is not time-critical. The Proposer does not object to the proposed 5-month assessment timetable.

The BSC allows the Panel to set an Assessment Procedure timetable which is longer than 3 months where the Panel believes this is justified by “the particular circumstances of the Modification Proposal (taking due account of its complexity, importance and urgency)” (F2.2.9), and provided the Authority does not issue a contrary direction.

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Assessment Activity	Purpose	Date
Panel meeting	Panel considers IWA.	13/10/11
Workgroup meeting 1	<ul style="list-style-type: none"> <li>Agree criteria for trigger/threshold</li> <li>Agree scope of any analysis to help establish the trigger/threshold.</li> </ul>	24/10/11
Undertake trigger / threshold analysis	ELEXON undertakes analysis in line with <b>Group's agreed scope</b> .	25/10/11 – 12/12/11
Workgroup meeting 2 (held while analysis undertaken)	Agree compensation arrangements (if any) to apply under Proposed Modification and any potential Alternative Modification.	08/11/11
<b>Produce 'straw man' claims</b> process (in parallel with trigger/threshold analysis)	ELEXON to work up compensation arrangements in <b>line with Group's</b> conclusions.	09/11/11 – 12/12/11
Workgroup meeting 3	<ul style="list-style-type: none"> <li>Discuss analysis results / <b>'straw man'</b></li> <li>Agree solution(s) and implementation approach for consultation</li> <li>Agree initial views on Applicable Objectives.</li> </ul>	13/12/11
Draft consultation	ELEXON drafts consultation document.	14/12/11 – 06/01/12
Review consultation	Group reviews and provides comments.	09/01/12 – 12/01/12
Assessment Consultation / impact assessment	ELEXON issues industry consultation and impact assessment for 15WDs.	13/01/12 – 03/02/12
Workgroup meeting 4	<ul style="list-style-type: none"> <li>Discuss industry responses</li> <li>Agree solution for Proposed Modification and any Alternative Modification</li> <li>Agree Implementation Date and legal text</li> <li>Agree final views on Applicable Objectives.</li> </ul>	08/02/12
Draft report	ELEXON drafts Assessment Report.	09/02/12 – 17/02/12
Review report	Group reviews and provides comments.	20/02/12 – 24/02/12
Submit report	ELEXON submits Assessment Report to Panel.	02/03/12
Panel meeting	Panel considers Assessment Report.	08/03/12
Report Phase Consultation	ELEXON issues 15WD industry consultation.	13/03/12 – 02/04/12
Submit report	ELEXON submits Draft Modification Report.	06/04/12
Panel meeting	Panel considers Draft Modification Report.	12/04/12

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## Estimated progression costs

The following tables contain our estimates of the costs involved in progressing P276 through the Modification Procedures.

Estimated progression costs based on proposed 5-month Assessment timetable	
Meeting costs (including Workgroup member expenses)	£2,000 (based on 4 meetings)
Non-ELEXON legal and expert costs	£0
ELEXON resource	50 man days, equating to £12,000

The ELEXON resource cost is an estimate of how much time and effort it will take us to progress P276 through the Assessment and Report phases. This includes time supporting industry groups, drafting documentation and producing legal text.

Below is our estimate of the cost incurred by the industry in assessing P276:

Estimate of total industry assessment costs					
Workgroup support	Est #mtgs	Est # att	Est effort	Est rate	total
	4	5	1.5	605	<b>£18,150</b>
Consultation response support	Est #con	Est # resp	Est effort	Est rate	total
	2	6	2.5	605	<b>£18,150</b>
Total					<b>£36,300</b>

This is based on:

- The estimated number of Workgroup meetings and industry attendees per meeting, plus the estimated number of industry consultations and responses;
- The assumption that each industry attendee puts in 1.5 man days of effort per meeting, and that each respondent spends 2.5 man days in effort per consultation response; and
- A standard rate of £605 per man day of effort.

The result is:

*4 Workgroup meetings x 5 attendees x 1.5 MDs effort x £605 = **£18,150***

*6 responses x 2.5 MDs effort x £605 x 2 consultations = **£18,150***

**Total = £36,300**

## 5 Likely Impacts



### Impact on BSC Systems and processes

BSC Agents may need to update their working practices to reflect the new trigger/threshold for suspending normal market operations. The BSC Panel will need to consider any compensation claims (potentially by appointing a Claims Committee), and the Funds Administration Agent and Settlement Administration Agent will need to perform the Settlement of any upheld claims.

### P276 impacts

The impacts listed here are indicative and may change as the solution develops during the Assessment Procedure.

### Impact on BSC Parties and Party Agents

P276 will impact all BSC Trading Parties and notification agents (Energy Contract Volume Notification Agents and Metered Volume Reallocation Notification Agents), as these participants will be directly affected by a decision whether or not to suspend the market.

### Impact on Transmission Company

The Transmission Company will be required to determine whether the new BSC trigger/threshold is met, and therefore whether normal BSC market operations are suspended.

### Impact on ELEXON

ELEXON will be required to:

- Keep BSC Parties informed of the situation (as far as is possible during any blackouts); and
- Administer any compensation arrangements (including providing the necessary support to the Panel/Claims Committee in determining claims).

### Impact on Code

Section G <b>'Contingencies'</b>	Changes will be needed to reflect: <ul style="list-style-type: none"> <li>• The new trigger/threshold; and</li> <li>• Any compensation arrangements for participants affected by a Partial Shutdown in which the market is not suspended.</li> </ul>
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### Impact on Code Subsidiary Documents

<b>BSCP201 'Black Start and Fuel Security Contingency Provisions and Claims Processes'</b>	Will need to describe: <ul style="list-style-type: none"> <li>• The process by which market suspension is/is not triggered following a Partial Shutdown; and</li> <li>• Any claims process for participants affected by a Partial Shutdown in which the market is not suspended.</li> </ul>
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### Impact on Core Industry Documents and other documents

Grid Code	May need consequential changes – e.g. possibly to introduce a new <b>definition of a 'Local Shutdown' in which Black Start instructions are issued</b> but the market is not suspended.
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## 6 Recommendations



On the basis of this IWA, ELEXON invites the Panel to:

- DETERMINE that Modification Proposal P276 progresses to the Assessment Procedure;
- AGREE the Assessment Procedure timetable such that an Assessment Report should be completed and submitted to the Panel at its meeting on 8 March 2012;
- DETERMINE that the P276 Workgroup should be formed from members of the Issue 42 Group, supplemented with any other experts in **the BSC's and Grid Code's Black Start** arrangements;
- AGREE the **P276 Workgroup's** Terms of Reference;
- AGREE that P276 has no interaction with any ongoing SCRs; and
- AGREE that P276 does not meet the Self-Governance Criteria.

### Recommendation

ELEXON recommends a 5-month Assessment Procedure for P276.

## 7 Further Information

You can find more information in:

Attachment A – P276 Modification Proposal; and

Attachment B – [Issue 42 Report](#).

## 4.5. MP Form

<b>Modification Proposal – BSCP40/03</b>	MP No: P276 <i>(mandatory by BSCCo)</i>
<b>Title of Modification Proposal:</b>	
Introduce an additional trigger/threshold for suspending the market in the event of a Partial Shutdown	
<b>Submission Date:</b> 30 <sup>th</sup> September 2011	
<b>Description of Proposed Modification</b>	
<p>We propose to introduce an additional trigger or threshold into the BSC, so that normal BSC market operations are only suspended in the event of a Partial Shutdown of the Transmission System where this additional BSC trigger or threshold is met. This will avoid automatically suspending the market following any small, localised shutdowns for which market suspension would be disproportionate.</p> <p>The BSC's Standing Issue 42 Workgroup recommended this solution.<sup>1</sup></p> <p>The Issue 42 Group discussed a number of potential triggers/thresholds. It did not have a strong preference between these and recommended that further analysis should be carried out under a Modification Proposal. To help us identify the appropriate threshold/trigger to apply under the Proposed Modification, we therefore propose that the Workgroup for this Modification Proposal undertakes further consideration (and, if appropriate, analysis) in this area. We agree with the Issue 42 Group's view that any trigger/threshold must be based on information which is quickly available to the Transmission Company in real time, and must be a 'hard-wired' trigger/threshold so that industry has certainty of the situation.</p> <p>We also propose that the BSC should apply compensation arrangements to generators issued with a Black Start instruction by the Transmission Company when the market is not suspended. The Issue 42 Workgroup also discussed whether compensation arrangements should be required for generators and Suppliers in the affected area, who are prevented from generating or who lose demand as a result of the incident. We believe this falls outside of this Modification Proposal but would be happy to discuss this further within the Workgroup. This could form part of an Alternative Modification.</p> <p>The aim of these compensation arrangements would be to hold affected Parties neutral to the event, and a starting point for discussion could be the BSC's existing 'Avoidable Costs' claims provisions for Black Start situations where the market is suspended. We note that the Issue 42 Group had differing views on what BSC compensation (if any) should apply, and whether it could duplicate existing compensation mechanisms under other codes such as the CUSC. To help us decide what compensation arrangements (if any) to include in the Proposed Modification, we therefore propose that the Workgroup for this Modification Proposal assess this area further.</p>	

<sup>1</sup> <http://www.elexon.co.uk/Pages/Issue42.aspx>

<b>Modification Proposal – BSCP40/03</b>	MP No: P276 <i>(mandatory by BSCCo)</i>
<b>Description of Issue or Defect that Modification Proposal Seeks to Address</b>	
<p>The issuing of Black Start instructions by the Transmission Company, when reenergising part of the Transmission System following a small localised shutdown, could lead to the automatic suspension of normal GB electricity market operations. As well as being considered under Issue 42, this issue has also been raised previously by the BSC's <a href="#">P231</a> Workgroup and the Grid Code Review Panel.</p> <p>Section G of the BSC suspends normal BSC market operations in the event of a Black Start situation. This includes suspending the normal operation of the Balancing Mechanism, the notification of contract volumes and the calculation of energy indebtedness (i.e. credit positions). In this situation, a single Imbalance Price would apply and the Lead Parties of any BM Units which had been given Black Start instructions under the Grid Code would be entitled to compensation under the BSC.</p> <p>Operating Code (OC) 9 of the Grid Code defines two types of Black Start situation: a Total Shutdown or a Partial Shutdown of the Transmission System. The BSC's current trigger for suspending the market is the notification by the Transmission Company to Parties that either a Total Shutdown or a Partial Shutdown, as defined in the Grid Code, has occurred. A Partial Shutdown could include 'local' events in which a small part of the Transmission System has shut down in a single area, for which suspending the market would be a disproportionate response.</p> <p>If any part of the GB Transmission System becomes disconnected from the remaining 'healthy' system, resulting in a shutdown of the disconnected part, the Transmission Company will work to restore the disconnected part of the system. This may or may not involve issuing Black Start instructions, and may or may not constitute a Partial Shutdown under the Grid Code, depending on the options available to the Transmission Company.</p> <p>The Transmission Company will have many factors to consider which will ultimately influence the approach that is used. However, the current BSC rules could make the Transmission Company reluctant to issue Black Start instructions even if this is the best/quickest way of restoring supply, in case this fulfils the Grid Code's definition of 'Partial Shutdown' and thereby leads to the automatic suspension of the market. Such suspension would impact every User of the GB market, resulting in significant disruption. For small, localised shutdowns the disruption of market suspension could be greater than that of allowing the market to continue. The key to this Modification Proposal will be establishing an appropriate way of determining the point at which a shutdown becomes significant enough to necessitate market suspension.</p>	
<b>Impact on Code</b>	
This Modification Proposal is likely to impact Section G 'Contingencies' and possibly the definitions in Annex X-1.	
<b>Impact on Core Industry Documents or System Operator-Transmission Owner Code</b>	
Depending on the chosen BSC trigger/threshold, a consequential change to the Grid Code may also be needed to add a new definition of 'Local Shutdown'.	

<b>Modification Proposal – BSCP40/03</b>	MP No: P276 <i>(mandatory by BSCCo)</i>
<p><b>Impact on BSC Systems and Other Relevant Systems and Processes Used by Parties</b></p> <p>There may be an impact on the BSC Panel, ELEXON, the Transmission Company and BSC Agents to amend their processes, e.g. to administer/apply the compensation arrangements. At this stage, we do not anticipate any significant systems impacts.</p>	
<p><b>Impact on other Configurable Items</b></p> <p>This Modification Proposal is likely to impact BSC Procedure (BSCP) 201 'Black Start and Fuel Security Contingency Provisions and Claims Processes'.</p>	
<p><b>Justification for Proposed Modification with Reference to Applicable BSC Objectives</b></p> <p>We believe that this Modification Proposal better facilitates the achievement of BSC Objectives (b), (c) and (d).</p> <p>Ensuring that the market is not suspended for small, localised shutdowns where the disruption of suspension would be disproportionate to the event will better facilitate:</p> <ul style="list-style-type: none"> <li>• Applicable BSC Objective (b)<sup>2</sup>, by enabling the Transmission Company to operate the Transmission System in the most efficient manner without being constrained by concerns about triggering market suspension;</li> <li>• Applicable BSC Objective (c)<sup>3</sup>, by ensuring that BSC Parties are not exposed to the disruption of market suspension in situations where this disruption would be greater than that caused by not suspending the market; and</li> <li>• Applicable BSC Objective (d)<sup>4</sup>, by avoiding the need to suspend normal balancing and Settlement operations (and the effort incurred in restoring these operations post-event) except where justified by the materiality of the shutdown.</li> </ul>	
<p><b>Is there a likely material environmental impact?</b></p> <p>No.</p>	
<p><b>Urgency Recommended:</b></p> <p>No.</p>	
<p><b>Justification for Urgency Recommendation</b></p> <p>Not applicable.</p>	

<sup>2</sup> 'The efficient, economic and co-ordinated operation of the national electricity transmission system'.

<sup>3</sup> 'Promoting effective competition in the generation and supply of electricity, and (so far as consistent therewith) promoting such competition in the sale and purchase of electricity'.

<sup>4</sup> 'Promoting efficiency in the implementation and administration of the balancing and settlement arrangements'.

<b>Modification Proposal – BSCP40/03</b>	MP No: P276 <i>(mandatory by BSCCo)</i>
<b>Self-Governance Recommended:</b>	
No.	
<b>Justification for Self-Governance Recommendation</b>	
Not applicable.	
<b>Should this Modification Proposal be considered exempt from any ongoing Significant Code Reviews?</b> <i>(mandatory by originator in order to assist the Panel decide whether a Modification Proposal should undergo a SCR Suitability Assessment)</i>	
No. This Modification Proposal has no interaction with any ongoing SCRs.	
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<b>Modification Proposal – BSCP40/03</b>	MP No: P276 <i>(mandatory by BSCCo)</i>
<b>Attachments: Yes</b> <i>(delete as appropriate) (mandatory by originator)</i>  <b>If Yes, Title and No. of Pages of Each Attachment:</b> <a href="#">Panel paper 186/12 'Report on Issue 42 – Defining a Local Shutdown' (10 pages)</a>	





## Report on Issue 42 - Defining a 'Local Shutdown'

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<b>Meeting Name</b>	BSC Panel
<b>Meeting Date</b>	11 August 2011
<b>Purpose of paper</b>	For Information
<b>Summary</b>	National Grid raised Issue 42 to examine <b>the appropriateness of the BSC's and Grid Code's Black Start rules</b> in the event of a 'local' shutdown of part of the Transmission System. This paper summarises the Issue 42 Group's conclusions and Appendix 1 contains its full discussions. We invite you to note these and to close Issue 42.

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### 1. What are the BSC's current Black Start arrangements?

- 1.1 Section G of the BSC contains the arrangements for suspending normal BSC market operations in the event of a Black Start situation. This includes suspending the normal operation of the Balancing Mechanism, the notification of contract volumes and the calculation of energy indebtedness (i.e. credit positions). In this situation, a single Imbalance Price applies and the Lead Parties of any BM Units which have been given Black Start instructions under the Grid Code are entitled to compensation under the BSC.
- 1.2 Operating Code (OC) 9 of the Grid Code defines two types of Black Start situation: a Total Shutdown (where generation has ceased in the whole Transmission System) or a Partial Shutdown (where **generation has ceased in only part of the Transmission System**). **The BSC's current trigger for suspending the market is the notification by National Grid to Parties that either a Total Shutdown or a Partial Shutdown, as defined in the Grid Code, has occurred.**

### 2. What is the issue?

- 2.1 The Issue 42 Group agrees that there is a category of 'localised' Partial Shutdown for which suspending the market would be a disproportionate response, and would cause unnecessary disruption. You can find the Group's reasons for this view in Appendix 1.

### 3. What is the solution?

- 3.1 The Group agrees that an additional trigger or threshold should be added to the BSC, so that the market is only suspended in the event of a Partial Shutdown if this additional BSC trigger/threshold is also met. This will avoid automatically suspending the market for any small, localised shutdowns.
- 3.2 The Group has differing views on which trigger/threshold to use in the BSC, and it recommends that a BSC Modification Proposal is raised to assess these further. The Group does agree that any trigger or threshold must be based on information which is quickly available to National Grid in real time.
- 3.3 The Group also agrees that any BSC Modification Proposal will need to consider what compensation arrangements the BSC should apply to Parties who are affected by a localised shutdown in which the market is not suspended.

- 3.4 Depending on the chosen BSC trigger/threshold, a consequential change to the Grid Code may be needed to **add a new definition of 'Local Shutdown'**.
- 3.5 The Group has also identified some possible **ambiguity in the Grid Code's existing definition of Partial Shutdown**. This could potentially **lead to different interpretations of what types of 'localised' shutdown** currently constitute a Black Start event, and may therefore require further consideration.
- 3.6 The Groups full discussion, their views and thoughts can be found in Appendix 1.

#### 4. What areas need further assessment as part of a Modification Proposal?

- 4.1 The Group agrees that the following should be assessed during the progression of any BSC Modification Proposal resulting from Issue 42:
- 1) **What is the appropriate dividing line between a 'Local Shutdown' and a Partial Shutdown? How big/severe should a shutdown be before the market is suspended and why?**
  - 2) How should this dividing line be reflected in the BSC?
  - 3) What BSC arrangements, if any, are required to compensate the following participants in the **event of a 'Local Shutdown'**?
    - a) Generators issued with Black Start instructions by National Grid;
    - b) Other generators in the affected area who are prevented from generating by the incident; and
    - c) Suppliers in the affected area who lose demand as a result of the incident.
  - 4) How would this BSC compensation interact with Imbalance Charges and compensation arrangements in other codes (e.g. in the CUSC)?
  - 5) Are any Grid Code changes needed?

#### 5. Next steps

- 5.1 The Group agrees that the next step should be the raising of a BSC Modification Proposal, and that there is no need for any further discussion under Issue 42.

#### 6. Recommendations

- 6.1 We invite you to:
- a) **NOTE** the Issue 42 Group's discussions and conclusions;
  - b) **NOTE** the **Group's** unanimous recommendation that a BSC Modification Proposal should be raised;
  - c) **NOTE** that a consequential Grid Code change may be needed depending on how the BSC Modification Proposal is developed; and
  - d) **Note** Issue 42 is closed.



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**List of appendices**

Appendix 1 – Issue 42 Group's detailed discussions

Appendix 2 – Issue 42 Group's membership



## Appendix 1 – Issue 42 Group’s detailed discussions

### 1. What is the issue?

- 1.1 The Group agrees that there is a defect within [Section G](#) of the BSC, in that it automatically suspends the market when there is a Partial Shutdown (as defined in the Grid Code). This could include ‘local’ events in which a small part of the Transmission System has shut down in a single area, and where suspending the market would be a disproportionate response.
- 1.2 The Group concludes that this is an issue for two reasons:
- **It could lead to the market being suspended in response to a local shutdown**, even if the cost and disruption of this to Parties is greater than that of allowing the market to continue; and
  - **It could lead to National Grid being reluctant to issue Black Start instructions** even if this is the best/quickest way of restoring supply, because National Grid would know by doing so it would trigger suspension of the market.
- 1.3 The Group believes there is a secondary issue in that there may also be uncertainty about how to interpret the Grid Code’s definition of Partial Shutdown (and hence uncertainty over the current trigger for suspending the market).
- 1.4 The definitions of Total Shutdown and Partial Shutdown in [OC9](#) of the Grid Code are as follows:
- **‘A "Total Shutdown" is the situation existing when all generation has ceased and there is no electricity supply from External Interconnections. Therefore, the Total System has shutdown with the result that it is not possible for the Total System to begin to function again without NGET’s directions relating to a Black Start.’** (OC9.4.1)
  - **‘A "Partial Shutdown" is the same as a Total Shutdown except that all generation has ceased in a separate part of the Total System and there is no electricity supply from External Interconnections or other parts of the Total System to that part of the Total System. Therefore, that part of the Total System is shutdown with the result that it is not possible for that part of the Total System to begin to function again without NGET’s directions relating to a Black Start.’** (OC9.4.2)
- 1.5 Those members of the Issue 42 Group who were part of the P231 Workgroup<sup>1</sup> initially believed that the Grid Code’s definition of Partial Shutdown means the following:
- If National Grid issues a Black Start instruction to any Black Start Station in any circumstance, even if just to a single Black Start Station, then this always constitutes a Partial Shutdown under the Grid Code and the market will therefore always be automatically suspended under the BSC (this has also historically **been National Grid’s interpretation of the Grid Code**); and

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<sup>1</sup> [P231](#) ‘Black Start and Fuel Security Code Procedures under the BSC’ was implemented in 2009. The treatment of ‘local’ shutdowns fell outside its scope, and the P231 Workgroup recommended that a separate Issue Group consider it at an opportune time. See pages 33 and 36 of the P231 Assessment Report.



- Conversely, if National Grid does not issue a Black Start instruction to any Black Start Station during a shutdown of part of the Transmission System, then this is not classified as a Partial Shutdown (as defined in the Grid Code) and the market will continue normally under the BSC.

1.6 Other Issue 42 Group members initially shared this view. However, the Group's subsequent discussions have raised possible doubts on this interpretation because:

- **The Grid Code's definition of a Partial Shutdown refers to a situation in which "it is not possible" for National Grid to restore the system without issuing Black Start directions.** The Grid Code is silent on situations in which National Grid has a choice over whether to issue Black Start directions but believes such directions to be the best/quickest solution. The Group notes the example of the August 2003 London blackout, where National Grid had **to restore power using the remaining 'healthy' part of the Transmission System** as no Black Start Stations were in the shut-down part of the network. The Group notes that, if Black Start Stations had been available, National Grid would have had to make a decision as to whether issuing Black Start directions was a better/quicker approach. The Group considers that if National Grid chose to issue Black Start directions in this hypothetical situation, there is some uncertainty as to whether it would constitute a Partial Shutdown. This is because it would not meet **the part of the definition which states that 'it is not possible for that part of the Total System to begin to function again without NGET's directions relating to a Black Start'**. The Group notes National Grid's advice that, where part of the network is down, it is always possible to re-energise it from the 'healthy' system – it is just that this might take a long time. National Grid and some members of the Group therefore interpret **the Grid Code's** definition of a Partial Shutdown to mean 'not possible' *within a reasonable time*.<sup>2</sup>
- **Conversely, an event could be classified as a Partial Shutdown under the Grid Code's definition even if National Grid does not issue any instructions to Black Start Stations.** This is because the definition refers to "NGET's directions relating to a Black Start". The Grid Code's definitions of Total Shutdown and Partial Shutdown refer to 'Black Start directions', although these are not defined and (with the exception of OC9.4.7.5) the rest of OC9 refers instead to 'instructions'.<sup>3</sup> The 'instructions' described throughout OC9.4.7 do not just cover those given to Black Start Stations but also include a variety of other instructions (such as the implementation of Local Joint Restoration Plans, instructions to other generators and Distributors and the alteration of demand).

1.7 The Group concludes that the current definition of a Partial Shutdown, and thus the current trigger for suspending the market, may therefore be less mechanistic and more ambiguous than previously realised. Despite this, it agrees that a change is still needed to prevent the market being automatically suspended under the BSC whenever a Partial Shutdown (as currently defined in the Grid Code) occurs.

<sup>2</sup> Noting that one of the overall objectives of OC9 is "To achieve, as far as possible, restoration of the Total System and associated Demand in the shortest possible time" (OC9.2.1).

<sup>3</sup> The Grid Code's definitions are also circular in that they define a 'Black Start' as existing when there is a Partial Shutdown, and a Partial Shutdown as existing where there are Black Start directions.

## 2. What is the solution?

### **Additional BSC trigger or threshold for suspending the market**

- 2.1 The Group agrees that the BSC and Grid Code need to recognise a category of events in which National Grid issues Black Start directions/instructions but the market is not suspended. The Group agrees that an additional trigger or threshold should be added to the BSC in order to avoid automatically suspending the market for any small, localised shutdowns during which National Grid gives Black Start directions/instructions.
- 2.2 The Group agrees that this requires the BSC to be able to distinguish between two different scenarios:
- A Partial Shutdown in which the market is suspended because the additional BSC trigger/threshold is met; and
  - A Partial Shutdown in which the market is not suspended because the additional BSC trigger/threshold is not met.
- 2.3 The Group agrees that it is open for further discussion whether the second category of event should still be called a Partial Shutdown in the Grid Code, or whether **a new Grid Code definition of 'Local Shutdown'** is needed. Either way, there is unanimous agreement that there needs to be some dividing line between the two categories, and this dividing line needs to be defined in such a way that National Grid can quickly decide which category a particular event falls into (using information available to it close to real time). The Group agrees that the trigger/threshold for suspending the market should always be contained in the BSC, as it is BSC Parties who are directly affected.
- 2.4 The Group agrees that the additional BSC trigger/threshold must measure the point at which a shutdown **becomes significant enough to suspend the market. The Group agrees that this must be a 'hardwired'** trigger so that industry has certainty of the situation. For example, a solution whereby the Panel meets to decide whether the market should be suspended would not give certainty and may not be practical if Panel Members are in an area of the country without power.
- 2.5 The Group has differing views on what is the most appropriate trigger/threshold. The table on the following page outlines the possible triggers/thresholds suggested by members.



Suggested trigger/ threshold	Potential pros	Potential cons	Conclusion
Loss of a certain % or MW amount of demand and/or generation from the system	Mechanistic and easy to identify?	Impact of a certain % or MW loss will differ depending on its location. For example, losing 400MW in Scotland will have a much larger impact than losing the same amount in central London. May be difficult for National Grid to precisely measure this threshold in real time.	Potential candidate for further assessment as part of a Modification Proposal.
Loss of a certain % or number of GSP Groups from the system (e.g. suspend if > 1 GSP Group lost)		Shutdown may not map well to GSP Groups – e.g. would not want a very small event on a border between 2 or more GSP Groups to cause suspension of the market. Impact of losing one GSP Group may be different to another (e.g. North Scotland compared with London).	
Loss of a certain % or number of circuits from the system		None identified.	
Loss of a certain % or number of customers	Mechanistic. Blackouts ultimately affect customers, so could be an appropriate measure.	May not be apparent to National Grid close to real time (but depends how precisely the threshold needs to be measured – for example, National Grid could establish an order of magnitude by contacting the relevant Distributor(s)).	Group believes this would not be a suitable trigger.

2.6 The Group notes that, as a market decision, there is unlikely to be a 'right' technical figure to use. The key question is how to decide the point at which not suspending the market does more harm than suspending it? The Group notes that care should be taken not to create perverse incentives to trigger the threshold.

- 2.7 The Group agrees that, once market suspension has been triggered, the market should remain suspended until the Panel decides to resume it **under the BSC's existing Black Start rules**. If the suspension is triggered by a certain percentage of generation being lost, the market should not then automatically resume if this percentage drops back down below the threshold.

#### **New compensation arrangements to apply when the market is not suspended**

- 2.8 The Group agrees that, whatever the trigger/threshold, consideration should be given to what compensation arrangements should apply to **Parties who are affected by a 'local' shutdown in which the market is not suspended**. The Group agrees that the aim of any arrangements should be to hold affected Parties neutral to the event. This could potentially cover:
- Generators who are issued with Black Start instructions by National Grid;
  - Other generators in the affected locality who are prevented from generating by the incident (although one member believes this may already be catered for under the existing compensation provisions in the CUSC); and
  - Suppliers in the affected locality who lose demand as a result of the incident (although one member notes that similar arrangements have been suggested and rejected under previous BSC Demand Control modifications). **The Group agrees that, because contracts are 'firm', Suppliers outside the locality who have contracted with affected generators for 'lost' demand will not be disadvantaged.**
- 2.9 The Group notes that the BSC currently allows a Party to claim **'Avoidable Costs'** through a post-event claims process, **where the Party's BM Unit has been given a "black start instruction"** by the Transmission Company.<sup>4</sup> The Group agrees that this should continue to apply **under a 'local shutdown'** even if the market is not suspended. The Group notes that the Avoidable Costs arrangements are currently based on the application of a single imbalance price during market suspension. They may therefore need amending for circumstances in which Black Start directions are issued but the market is not suspended, and in which dual cash-out prices continue to apply.
- 2.10 The Group has differing views on how to apply this compensation – **e.g. using deemed 'correcting' volumes, and settling them at a 'market' price or the Reverse Price**. The Group also has differing views on the practicalities/appropriateness for applying compensation to Suppliers (including the potential difficulty of calculating deemed Supplier volumes), but suggests that previous work undertaken for BSC Modifications on Demand Control could form a starting point for further discussions. The Group notes that care should be taken **to avoid 'double-counting' with** any compensation arrangements under other Codes, such as the disconnection compensation payments introduced to the CUSC by [CAP048](#).

<sup>4</sup> Section G3.3 of the BSC defines a "black start instruction" as being any instruction given by the Transmission Company to the Lead Party of a BM Unit pursuant to OC9.4.7.4, Balancing Code (BC) 2.7 or BC2.9 of the Grid Code, and which relates to any Settlement Period(s) during a Black Start. G3.3.1(a) is clear that this applies to any BM Unit which is the subject of such instruction, regardless of whether or not it relates to a Black Start Station.



### **Full or partial market suspension?**

- 2.11 The Group notes that the BSC's current market suspension provisions are 'all or nothing', and has considered whether it would be feasible and/or appropriate to:
- a) Only suspend some parts of the market during a 'local' shutdown; and/or
  - b) Only suspend the market in the part of the country which is affected by the 'local' shutdown.
- 2.12 The Group agrees that, because Parties' contracts are global, approach b) would be impractical. It also agrees that approach a) is likely to cause more disruption than suspending the market nationally and then having post-event compensation arrangements for affected Parties.

### **3. What questions need to be considered in a future Modification?**

- 3.1 The Group agrees that there are a number of areas that would need to be assessed further if a BSC Modification Proposal is raised to progress its recommended solution:
- 1) What is the appropriate dividing line **between a 'Local Shutdown' and a Partial Shutdown?** How big/severe should a shutdown be before the market is suspended and why? (Potentially this could include analysing the cash-flow disruption of suspending versus continuing the market).
  - 2) How should this dividing line be reflected in the BSC?
  - 3) What BSC arrangements are required to compensate affected **participants in the event of a 'Local Shutdown'?**
  - 4) How would this BSC compensation interact with Imbalance Charges and compensation arrangements in other codes (e.g. in the CUSC)?
  - 5) Are any Grid Code changes needed?

### **4. Conclusions**

- 4.1 The unanimous view of the Issue 42 Group is that issues exist in the Black Start provisions in the BSC and possibly the Grid Code, and that the problems with the current BSC drafting should be resolved through the Modification process.
- 4.2 The Group believes that the BSC should be amended so an additional trigger/threshold is required for suspension of the market in the event of a Partial Shutdown, so suspension is not automatic as it is currently. This may also require a new definition of **'Local Shutdown' in the Grid Code.**
- 4.3 The Group believes that that Issue 42 should now be closed.



## Appendix 2 – Issue 42 Group’s membership

Member	Organisation	21/06/11
Kathryn Coffin	ELEXON (Chair)	Y
Michael Edwards	ELEXON (Lead Analyst)	Y
Ben Smith	Proposer (National Grid)	Y
Gary Henderson	IBM for Scottish Power	N
Esther Sutton	E.ON	Y
Garth Graham	SSE	
Bill Reed	RWE Npower	Y
Martin Mate	EDF	Y
Attendee	Organisation	21/06/11
John Lucas	ELEXON (technical support)	Y
Nilton Green	National Grid (technical support)	Y