

What stage is this document in the process?

01 Initial Written Assessment

02 Definition Procedure

03 Assessment Procedure

04 Report Phase



#### Your response

The P276 Workgroup requests your responses to the questions in this form.



#### How to return your response

Please email your response, with a subject line of "P276 Transmission Company Analysis"

to: [modifications@elexon.co.uk](mailto:modifications@elexon.co.uk)

by: 5pm on Friday 20 April 2012.

P276 Transmission Company Analysis

21 March 2012

Version 0.1

Page 1 of 7

© ELEXON Limited 2012

## Stage 03: Transmission Company Analysis

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

### Response Form

The P276 Workgroup requests your impact assessment of P276. In particular, it requests your responses to the questions in this form. To help the Workgroup understand your response, please provide supporting reasons for your answers where possible.

### Transmission Company Questions

#### Question 1:

#### Response:

Do you agree that, in principle, it is better to allow Parties to keep trading where they can during a Partial Shutdown?

Yes

*Please explain the reasons for your view.*

We agree that allowing Parties to continue trading until such time that this is impractical is of greater economic benefit to all Parties than suspending trading activity. Parties are not exposed to market suspension except where justified by the materiality of the situation.

#### Question 2:

#### Response:

The proposed Market Suspension Threshold is based on analysis of the point at which continuing the market is likely to cause greater disruption to BSC Parties' imbalance charges than suspending it.

Yes

Do you agree that this is the best way to decide when to suspend the market?

*Please explain the reasons for your view.*

We agree that this issue was considered carefully with a number of options to identify a suitable threshold level being considered. This option gave the most workable solution in simplicity and application in comparison with the others suggested.

#### Question 3:

#### Response:

Under the proposed solution, National Grid will mechanistically monitor the ongoing cumulative impact of the Partial Shutdown until either:

Yes

- This impact reaches a defined level (in which case the market is suspended);
- National Grid no longer has accurate baseline data to monitor the

**Question 3:****Response:**

---

impact mechanistically (in which case the market is suspended);  
or

- The Total System returns to normal.

Under this solution, due to the limits of National Grid's baseline data, it will not be possible to continue the market under a Partial Shutdown for longer than 1-2 days.

A suggested Alternative approach would assume that the initial snapshot impact of the Partial Shutdown (as determined mechanistically by National Grid) remains unchanged until either:

- A second, separate system event occurs (in which case the market is suspended automatically regardless of the cumulative impact); or
- The Total System returns to normal.

Under this suggested Alternative, the market could potentially continue under a Partial Shutdown indefinitely.

Do you agree that the proposed solution is better than the suggested Alternative?

*Please explain the reasons for your view.*

---

The main benefit of this modification is to apply a level of materiality to a partial shutdown situation in order to prevent immediate suspension of the market. An undefined second separate event introduces a degree of ambiguity into the proposal at a time of possible system/market stress, and reduces certainty for market participants.

---

**Question 4:****Response:**

---

Do you agree that the determination of whether the Market Suspension Threshold has been met should be purely mechanistic, rather than a subjective judgement?

Yes

*Please explain the reasons for your view.*

---

Parties need to be clear of the process of market suspension through meeting the threshold or from when current demand forecast data has expired, in order to prevent market uncertainty. The mechanistic approach supports this through process transparency.

---

**Question 5:****Response:**

---

Do you agree that, overall, the practical implications for Parties of continuing the market during Partial Shutdowns in which the proposed Market Suspension Threshold is not met are preferable to those of suspending the market in these situations?

Yes

*Please explain the reasons for your view.*

---

It is preferable to allow parties to continue trading where possible under a partial shutdown to prevent unnecessary economic effect to the market and participants. The analysis showed that the cost to market participants of allowing the market to continue up to a certain level was less than if market shutdown occurred immediately and so greater economic benefit to participants is achieved by utilising a threshold level to prevent immediate suspension.

---

**Question 6:****Response:**

Do you agree with the proposed BSC compensation arrangements for Partial Shutdowns in which the market is not suspended?

Yes

*Please explain the reasons for your view.*

We support the majority workgroup decision that compensation arrangements should be dealt with separately under the CUSC, to support consistency by keeping all compensation arrangements together.

**Question 7:****Response:**

Do you agree that the draft BSC legal text delivers the intention of the Proposer's P276 solution?

Yes

*If not, please explain the reasons for your view.*

We agree with the intention of the draft BSC legal text but have identified some text that requires further discussion. This text will be provided separately to Elexon for review and discussion outside of this response.

**Question 8:****Response:**

Does P276 impact the systems and/or processes that you use in your role as the Transmission Company?

Yes

*If yes, please explain how.*

P276 requires National Grid to monitor the Market Suspension Threshold during a Partial Shutdown. Our existing systems and processes do not have this capability and an IS solution within the control room will be necessary to meet these requirements.

P276 also requires National Grid to provide additional notifications during a Partial Shutdown to Elexon (the BSCCo) of the time, in its reasonable opinion and as soon as is practicable, that there was either a:

- Breach of Market Suspension Threshold, or
- Return to normal system operation (before threshold has been breached)

National Grid processes already account for existing Grid Code notification requirements to inform Elexon with regard to Partial Shutdowns. These existing notifications will remain unchanged under P276; the additional requirements will be incorporated.

National Grid may require updating of local work instructions and business procedures to reflect both the monitoring and the reporting activities.

**Question 9:****Response:**

Will you incur, as the Transmission Company, any development, capital and/or operating costs in implementing P276?

Yes

*If yes, please provide an estimate of these costs in appropriate detail and explain how/if they differ depending on whether a manual or automated threshold-monitoring solution is used.*

**Automated Solution**

Implementing P276 as an automated monitoring tool within the Electricity Balancing System (EBS) would be undertaken as part of a version update to this system. National Grid has carried out an internal estimate of the work required, this could be up to £300k. The EBS supplier, ABB, will not look in detail at the requirements until much later in the year as it is fully engaged in delivering the first EBS version.

Automated system cost estimate: £300k Capex

**Manual Solution**

Implementing P276 through a *manual* system threshold monitoring solution (requiring interventions to conduct the monitoring) to cover the period before the automated system becomes available is estimated to cost no more than £100k. Costs are associated with the complexity of the different data interfaces and providers. The solution may also require further modification to stay aligned with the forecasting and operational data systems from which it extracts data. These systems are due to be replaced during the lifetime of the *manual* solution. The cost of development and subsequent changes would need to be treated as Opex because of its short time in service, and as such would be unrecoverable by National Grid.

We have assumed that the manual interventions required within the control room to use this solution will be undertaken by the existing shift complement, with the consequence that reporting of any breach of the threshold to Elexon may be delayed compared to an automated solution.

Manual system cost estimate: £100k opex

---

**Question 10:**

---

What lead time do you require in order to implement P276 as:

a) A manual threshold-monitoring solution?

26 weeks

b) An automated threshold-monitoring solution?

Alignment with EBS version releases; earliest expected Q1 2014; thereafter estimated at six months.

*Please explain the reasons for the lead time required for each approach.*

---

The overriding objectives regarding development of an enduring threshold monitoring solution have been to

- ensure that the workload on Control Room staff is not significantly increased at a time of system stress and extra-ordinary activity,
- provide a robust, supported and auditable solution from its introduction, irrespective of whether this is an interim (termed manual) solution, because of its interactions with critical operational systems and its consequences for market operation.

**Preferred Option: Automated threshold-monitoring solution**

The enduring solution for threshold monitoring is to incorporate automated reporting within the Critical Network Infrastructure tools used within National Grid's Control Room. This best meets the requirements for a robust and fully supported system. Lead times for developing the solution are impacted by significant IT replacement projects on the critical systems that host the source data required for threshold monitoring. These systems are due to be changed or implemented in the next 12-18 months, the largest of which is the new Electricity Balancing System (EBS) due in Q3 2013. There are also new demand forecasting and data historian systems. All of these systems are key to automation of the requirements for P276. Implementation of P276 in the near term would require multiple changes to multiple systems. This would increase costs and development times, and would increase risks.

EBS is under development to replace the ageing Balancing Mechanism (BM) system, with a go-live date of Q3 2013. The project is at a phase where the functionality for release 1 is frozen to facilitate testing in advance of its introduction. The issue of needing a change freeze was considered in the first industry consultation on EBS in 2008. National Grid has been able to accommodate the majority of industry changes during the period since this consultation, however the project is now within a final phase to meet delivery timescales to achieve a stable and secure system at release, therefore incorporation of threshold

**Question 10:**

monitoring into this first release will not be possible. National Grid would look to introduce threshold monitoring within EBS as part of a second release. This will be some six months following EBS introduction, giving an implementation date of Q1 2014. The system is expected to have subsequent major releases typically on a six month basis.

National Grid has also considered short term changes to the existing Balancing Mechanism System to provide an earlier implementation date for an automated system, however the BM will no longer be available following the introduction of EBS, this would still leave a requirement for a temporary system to cover the six months before the second release of the EBS.

***Non Preferred Option: Manual threshold-monitoring solution***

The option to build a standalone system to cover the period prior to incorporation of a solution into the EBS has been considered. It will require data input from separate forecasting and operational data systems that are due to be changed in the next 12-18 months. Such a system would therefore require modification over its short lifetime to accommodate the changes in data sources.

The lead time for the development of such a system is estimated to be 26 weeks. It would also require ongoing development effort to keep the system aligned with changing data sources.

The system would place an additional operational requirement on Control Room staff as it will require manual intervention to run. The time taken to report any threshold breach to Elexon may be considerably extended above an automated solution depending on the nature of the Shutdown Event, as control priority actions will be to stabilise the operation of the transmission system, then determine and implement a restoration strategy.

The *manual solution* is not a preferred solution for National Grid as it creates an additional resource burden during the event, and moves away from its IT policy for the control room of restricting access to its critical systems. Our intention would be to replace this solution as soon as an automated approach was available.

National Grid would suggest that further consideration is given to any requirement to implement P276 threshold monitoring in advance of the introduction of an automated solution.

---

**Question 11:****Response:**

Do you agree that P276 requires consequential changes to the Grid Code, as identified in the P276 Assessment Consultation Document?

Yes

*Please explain the reasons for your view.*

Consequential changes have been identified within the Grid Code to address the proposed differing processes encountered under Partial and Total Shutdowns. We subsequently support the changes to the Grid Code, as proposed in the Consultation Document.

---

**Question 12:****Response:**

Do you believe that the implementation of the BSC and Grid Code changes should be aligned?

Yes

*Please explain the reasons for your view. If answering 'yes', please also give an estimate of the amount of time needed to progress the necessary Grid Code changes through the change process (from the point that the changes are formally raised to the point that they are sent to Ofgem for decision).*

As consequential changes are required within the Grid Code, combined alignment is preferred because of the terminology interaction between the two documents. Estimated time to make suitable Grid Code changes following a straightforward consultation process, would be six to eight months from the time of being formally raised.

**Question 13:****Response:**

Do you believe that P276 requires changes to any other Core Industry Document and/or the System Operator-Transmission Owner Code?

No

*If yes, please explain what these changes are.*

Not as identified however, we support the suggestion that separate consideration is given to reviewing compensation payments under the CUSC, and a clarity review of the SMAF Methodology Statement is subsequently undertaken to ensure that rules for flagging system-balancing actions are clear in relation to Partial Shutdowns in which the market is not suspended.

**Question 14:****Response:**

Does P276 have any implications (either positive or negative) for the security of supply?

Yes

*Please explain the reasons for your view.*

Allowing the market to continue trading has a number of benefits for security of supply. As noted in the Consultation, it is always possible to re-energise a part of the system that is shut down from the healthy system, however this may take some time. Under this proposal, the System Operator may now readily elect to choose the quickest and most economically efficient method to re-energise the part of the system that is shut down without fear of market suspension should a Black Start Station be used.

By allowing the market to continue, the System Operator does not have to take a central dispatch role, also bringing economic benefits to the market.

**Question 15:****Response:**

Do you agree that the Proposer's P276 solution better facilitates Applicable BSC Objectives (b), (c) and (d) and has no impact on Applicable BSC Objectives (a) and (e)?

Yes

*Please explain the reasons for your view. Please also provide details of any benefits to National Grid in its role as System Operator.*

As the Proposer, our view is that the solution better facilitates Applicable BSC Objectives (b), (c), (d) and has no impact on Applicable BSC Objectives (a) and (e).

**Question 16:****Response:**

Is there anything further that you believe the Workgroup should consider?

No

*Please explain the reasons for your view.*

No comment.

## Further Information



### Any questions?

If you have any queries on this form, please contact:

**Kathryn Coffin** on

020 7380 4030 or

[kathryn.coffin@elexon.co.uk](mailto:kathryn.coffin@elexon.co.uk).



To help us process your response, please:

- Email your completed response form to **modifications@elexon.co.uk**
- Use the following text in the subject line of your email: "P276 Transmission Company Analysis"
- Include a phone number in your covering email, so that we can contact you if we have any questions
- Respond by **5pm on Friday 20 April 2012** (the Workgroup may not be able to consider late responses)

The Workgroup will consider your response at its next meeting. Once it has completed its assessment of P276, it will draft its Assessment Report and present it to the BSC Panel meeting on 10 May 2012.

### Applicable BSC Objectives

The Applicable BSC Objectives, contained in the Transmission Licence, are:

- a) The efficient discharge by the licensee [i.e. the Transmission Company] of the obligations imposed upon it by this licence [i.e. the Transmission Licence];
- b) The efficient, economic and co-ordinated operation of the national 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 and administration of the balancing and settlement arrangements;
- e) Compliance with the Electricity Regulation and any relevant legally binding decision of the European Commission and/or the Agency<sup>1</sup>.

---

P276  
Transmission Company  
Analysis

---

21 March 2012

---

Version 0.1

---

Page 7 of 7

---

© ELEXON Limited 2012

---

<sup>1</sup> The Agency for the Co-operation of Energy Regulators.