

## Stage 03: Assessment Consultation

What stage is this document in the process?

01 Initial Written Assessment

02 Definition Procedure

03 Assessment Procedure

04 Report Phase

# P259: Provision of Applicable Balancing Services Volumes for Interconnectors

The Grid Code requires Interconnectors built after 1 April 2005 to be able to provide Mandatory Frequency Response to the System Operator. The Transmission Company submits volume data to Settlement to account for energy imbalance caused by Frequency Response provision, but will not know to which BM Unit this data should be assigned. Incorrectly assigned data exposes the Interconnector Error Administrator to Imbalance Charges.

P259 aims to ensure volume data is assigned to the correct BM Unit. It also proposes the Balancing Mechanism Reporting Service publishes Interconnector information equivalent to that reported for other BM Units.



The Modification Group initially recommends **approval** of Modification P259



High Impact: National Grid, Interconnector Error Administrators if P259 **not** implemented (implementation impact low for both)



Medium Impact: BSC Agents (Settlement Administration Agent and Balancing Mechanism Reporting Agent)



Low Impact: Interconnector Administrators (Interconnector Users and all other BSC Parties are not impacted by P259)

P259  
Assessment Consultation

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## About this document:

The purpose of this Assessment Consultation is to obtain views or further evidence from BSC Parties and other interested parties on Modification P259 and the contents of this document. The P259 Modification Group will discuss the consultation responses before making its recommendations to the Panel on 12 August 2010.

The P259 Assessment Consultation comprises two parts. This document is the first part, and provides details of the solution, impacts, costs, benefits and potential implementation activities associated with P259. The second part is Attachment A, the Assessment Consultation Questions form, which includes all the questions highlighted in this document.

## Why Change?

P259 aims to resolve an issue arising from the interaction of BSC processes and systems with a Grid Code requirement for new Interconnectors to be capable of providing Mandatory Frequency Response to the System Operator.

Grid Code modification H/04 'Changes to Incorporate New Generation Technologies and DC Interconnectors' obligated DC Converters (i.e. Interconnectors) commissioned after 1 April 2005 to meet certain technical requirements. These included having the capability to provide Mandatory Frequency Response. The first DC Converter affected by this change is the BritNed Interconnector between Great Britain and the Netherlands, which is currently expected to become operational on 1 April 2011.

The Transmission Company submits Applicable Balancing Services Volume Data (ABSVD) equal to the Mandatory Frequency Response volumes it expects from a BM Unit to account for the potential Imbalance caused by provision of Frequency Response. ABSVD is submitted into Settlement against the relevant BM Unit. However, an Interconnector Error Administrator (IEA) uses both Production and Consumption BM Units (and Energy Accounts), whereas a standard generation BM Unit uses only the Production Account). The Transmission Company therefore always assigns ABSVD to the Production BM Unit of a generator, but will not be able to identify which Interconnector Error Administrator (IEA) BM Unit (Production or Consumption) Interconnector ABSVD data should be assigned to.

Incorrectly assigned ABSVD exposes the IEA to spurious Imbalance Charges unless corrected data is submitted. Generators providing this service are not affected in this way.

A working group under the Connection and Use of System Code (CUSC) considered the facilitation of the Grid Code Interconnector requirements under the CUSC and BSC. This CUSC group developed several potential BSC solutions to resolve this issue. The P259 Modification Group developed one of these options as the P259 Proposed Modification and has also developed a potential Alternative Modification.

P259 also proposes that the Balancing Mechanism Reporting Agent (BMRA) reports related Interconnector information on the Balancing Mechanism Reporting Service (BMRS) as done for other Mandatory Frequency Response providers. The BMRS publishes data for generators and P259 contends some equivalent data should be published for Interconnectors that are now subject to the same requirement to be able to provide Mandatory Frequency Response.

If P259 is not implemented National Grid will need to operate a workaround solution in conjunction with BritNed in order to correctly allocate ABSVD. Implementation of P259 Proposed or the potential Alternative would avoid the need for this workaround, giving an estimated saving to National Grid of £14,000 - £50,000 per annum (based on operation with one Interconnector required to be able to provide Mandatory Frequency Response).

## Solution

Under the Proposed Modification the Settlement Administration Agent (SAA) would assign ABSVD to the correct IEA BM Unit, i.e. the BM Unit assigned the overall Imbalance volume (i.e. the Interconnector error volume).

Under the potential Alternative Modification error volumes and ABSVD would be assigned only to the IEA's Production BM Unit and Energy Account. The Consumption IEA BM Unit and Energy Account would remain in central BSC Systems but would be unused

(‘dormant’). This arrangement would be mandatory for Interconnectors required to be able to provide Mandatory Frequency Response, but optional for other Interconnectors.

P259 relates to Mandatory Frequency Response but would also support the use of ABSVD for commercial Frequency Response by Interconnectors. This is consistent with the current treatment of generators providing commercial Frequency Response.

## Impacts & Costs

Implementation of either the P259 Proposed or Alternative Modification would not impact Parties. Neither Settlement solution directly impacts National Grid or BritNed, though the provision of Mandatory Frequency Response by Interconnectors causes National Grid impacts that do not fall under P259 or the BSC. National Grid would be required to provide the necessary BMRS data, but this is subsumed in its wider (non-BSC) development work because the data is also required for its own processes.

Implementation of P259 Proposed would impact central BSC Systems, with an associated cost of £75,000. The central system impact and cost of the potential Alternative is being assessed in parallel with this consultation; it is not expected to exceed the cost of the Proposed Modification, and may be less.

Interconnectors built before 1 April 2005 are not impacted by P259, but under the potential Alternative could choose to use only one IEA BM Unit.

## Implementation

P259 could be implemented on 1 April 2011, if approved promptly by the Authority. 1 April 2011 would coincide with BritNed commencing live operation. It is not a standard BSC Release, but the Group does not believe this is an issue because there is no impact on Parties and the project costs are not materially higher.

The Group recommends that P259 is implemented on 1 April 2011 if approval is received from the Authority before 1 November 2010, or if this date is missed the next available BSC Release occurring no less than six months from the date approval is received (June 2011 or a subsequent Release). Implementation after 1 April 2011 would require National Grid and BritNed to operate a workaround solution in the interim.

## The Case for Change

The Group has initially unanimously agreed that P259 Proposed would facilitate achievement of the Applicable BSC Objectives compared with the current baseline. The Group identified benefits against all of the Objectives, though not all members agreed with all the benefits identified.

The Group will give its views on the potential P259 Alternative Modification when it has received the results of this consultation and the BSC Agent impact assessment of the Alternative solution. Some members believe the Alternative may provide additional benefits to Interconnectors, but there are concerns that further consideration is required before changing the operational structure of IEA BM Units, though no specific issues have been identified yet.

The Group has confirmed that both the Proposed and potential Alternative solution are consistent with implicit auctions for Interconnector capacity, and believes it has taken the EU Third Package into account as much as possible.

## Recommendations

The Group initially recommends that P259 Proposed Modification should be approved.

### Current Arrangements

#### Settlement of Interconnector volumes

The IEA is allocated any Metered Volume of energy that remains when all volumes notified by Interconnector Users have been deducted from the Metered Volume of the Interconnector. The IEA BM Unit Metered Volume (i.e. the error volume) is:

$$\boxed{\begin{array}{c} \text{IEA BM Unit} \\ \text{Metered Volume} \end{array}} = \boxed{\begin{array}{c} \text{Interconnector} \\ \text{Metered Volume} \end{array}} - \boxed{\begin{array}{c} \Sigma \text{ Interconnector} \\ \text{User BM Unit volume} \end{array}}$$

Interconnector User BM Unit volumes are determined by the Interconnector Administrator (IA) based on energy volume notifications received from Interconnector Users and any adjustments made by the IA. The remaining IEA BM Unit Metered Volume is the error volume, which incurs Imbalance charges that for the Interconnector (not Interconnector Users).

For each half hour Settlement Period the SAA allocates the IEA Metered Volume (i.e. the error volume) to either the IEA's Consumption or Production BM Unit based on the direction of the error. The SAA allocates the IEA's volume to the IEA Production BM Unit if it is positive and to the IEA Consumption BM Unit if it is negative.

#### Settlement of Mandatory Frequency Response by generators

Payment for delivery of Mandatory Frequency Response volumes is dealt with outside the BSC, under the CUSC. However, the potential Imbalance caused by provision of Mandatory Frequency Response is dealt with under the BSC. Generators' energy volumes are adjusted using Applicable Balancing Services Volume Data (ABSVD) so that any Frequency Response volume which National Grid (NG) has directed them to supply is taken into account. This ensures that they are not exposed to Imbalance Charges under the BSC for providing Mandatory Frequency Response.

ABSVD is equal to the Frequency Response volume that the generator has been instructed to deliver by NG. NG notifies the SAA of the ABSVD and which generator's Production BM Unit to allocate the ABSVD to. ABSVD for generators is always assigned to the Production BM Unit since the generator's Metered Volume is always positive.

The SAA takes the ABSVD into account when calculating Imbalance Charges. If the generator delivers exactly the Frequency Response volume it was directed to supply it will not incur Imbalance Charges for doing so. However, any deviation from the generator's energy volume position including ABSVD (including any deviation due to under- or over-delivery of Frequency Response) will incur Imbalance Charges. Settlement under the BSC does not distinguish what part of any Imbalance is due to under- or over-delivery of Frequency Response and what part has other causes.

#### Settlement of Mandatory Frequency Response by Interconnectors

No existing Interconnectors are currently obliged to provide Mandatory Frequency Response volumes at the direction of NG, but new Interconnectors commissioned after 2005 (including BritNed) will be required to do so. Under the existing arrangements Metered Volumes resulting from the provision of Mandatory Frequency Response by an Interconnector will be allocated to an IEA BM Unit (i.e. as the Frequency Response volumes will be provided by the Interconnector and not Interconnector Users this is the only result possible).

NG will allocate ABSVD to an IEA BM Unit to offset the instructed Frequency Response volume, so that the IEA does not incur Imbalances Charges for delivery of Mandatory Frequency Response by the Interconnector. However, unlike ABSVD for generators, which is always allocated to the Production BM Unit, ABSVD for an Interconnector must be allocated to either the Production or Consumption BM Unit as appropriate (i.e. the same IEA BM Unit which has been allocated the overall error volume). NG is not able to determine the correct BM Unit with certainty, and there is therefore a risk that ABSVD will be allocated to the wrong IEA BM Unit if no change is made to the BSC arrangements.

If ABSVD is allocated to the wrong IEA BM Unit by NG the IEA will be exposed to Imbalance Charges due to delivery of Mandatory Frequency Response by the Interconnector, unless NG is requested to reallocate the ABSVD to the correct IEA BM Unit. P259 contends that this means that the BSC treats Interconnectors differently to other providers of Mandatory Frequency Response (i.e. generators), for whom there are provisions in place that ensure they do not incur Imbalance Charges for delivering instructed Frequency Response.

The aim of all the P259 solution options is that the IEA is not at risk of exposure to Imbalance Charges due to an Interconnector's delivery of an instructed Frequency Response volume, only for over- or under-delivery of that volume (i.e. the same as for generators that provide Mandatory Frequency Response).

### **Implicit auctions**

New Interconnectors, including BritNed, will need to conduct trades via 'implicit auctions'. No Interconnectors are currently obliged to use implicit auctions, but we have explored how the current BSC arrangements could accommodate them. We recently informed the ISG of the potential approaches ([ISG112/05](#)) as follows:

- A. (No BSC impact) Implicit auction volumes are collected together with Interconnector errors and allocated to the IEA BM Units. The IA would not include implicit auction flows in Metered Volumes notified under Balancing and Settlement Code Procedure (BSCP) 04 and the SAA would therefore automatically include such flows in the IEA Metered Volumes. This is possible because:
  - There are no constraints in the Energy Contract Volume Allocation Agent (ECVAA) systems preventing an IEA having Energy Contract Volume Notifications (ECVNs);
  - There are no constraints in National Grid systems or the BMRS preventing Final Physical Notifications (FPNs) being submitted and reported for IEA BM Units; and
  - There are no constraints in the Energy Contract Volume Aggregation Agent (ECVAA) systems preventing FPNs for IEA BM Units being taken into account in credit checking.
- B. (BSC impact: changes to R7.1.2, T4.1) Implicit auction volumes are assigned to the IEA, but to a separate pair of Interconnector BM Units (i.e. not the existing IEA BM Units). This option would require the IEA to have two pairs of Interconnector BM Units; and
- C. (No BSC impact) The IEA finds a Party to be responsible for implicit auction volumes. This Party would function as a normal Interconnector User for BSC purposes.

IEAs required to operate implicit auctions therefore have to choose between option A and option C (unless they raise a Modification to amend the BSC). We understand that the IEA of BritNed, the first Interconnector to be in this position, intends to use option A.

The options for implicit auctions are included as background information, and are outside the scope of P259. The Group has sought to ensure that the P259 solution does not conflict with these implicit auction approaches.

## **Role of the IEA**

The role of the IEA is to be responsible for any Metered Volume not allocated to an Interconnector User (in accordance with existing BSC arrangements and the relevant Interconnection Agreement), including:

- Any amendment made to the Interconnector's operating program post Gate Closure (except to the extent that BSC R7.1.3(b) allows these to be reflected in Settlement);
- Any discrepancies caused by errors in estimating the losses on the Interconnector;
- Frequency Response (or other balancing services instructed post Gate Closure, except Bid Offer Acceptances (BOAs) which are already allowed for in R7.1.3(b)); and

Any other volume (e.g. implicit auctions) not allocated to an Interconnector User. When the BSC was drafted it was not envisaged that the IA would implicitly allocate volumes to the IEA in this way (because at the time it was thought that Interconnector capacity would be allocated through explicit auctions rather than implicit auctions) but doing so is not inconsistent with current BSC provisions.

## **The EU 'Third Package'**

The European Union (EU) Third Internal Energy Market Package (the 'Third Package') is the most recent legislation adopted by the European Council to deliver a single competitive energy market across the EU. The key objectives of the Third Package are to enhance consumer protection, improve the functioning of the energy markets and increase security of supply.

The Third Package came into force in September 2009. The bulk of the Third Package requirements must be transposed into domestic legislation by 3 March 2011. The Regulations are directly applicable and therefore do not need to be transposed, but the GB national market framework must be consistent with their application.

There is some latitude and therefore uncertainty in how the Third Package may be implemented in the GB market. In April 2010, the Department of Energy and Climate Change (DECC) issued a 'Call for evidence' consultation on the Third Package which did not set out implementation proposals, but rather sought views on its implications and how it may be implemented. A detailed consultation will follow, setting out proposals for aspects of the Third Package that require implementation.

Currently, the Grid Code will require the Interconnector to be capable of providing Mandatory Frequency Response. The manner in which the Third Package is ultimately implemented in GB may affect P259, as it could be implemented such that no Interconnectors are obligated to be capable of delivering Mandatory Frequency Response. It could also be concluded that the current rules remain appropriate, or that it should be Interconnector Users (not operators) who provide Mandatory Frequency Response, or that some other arrangement is appropriate.

This may be speculated upon, but there is no firm indication thus far. National Grid must prepare to meet its obligations under the Grid Code as it currently stands and P259 must be assessed against the current Code baseline. It is acknowledged that the Authority may, when it comes to make its decision on P259, have information which is not currently available to the Group.



## Frequency Response and ABSVD

For an overview of Frequency Response and ABSVD see Appendix A.

### Commercial provision of Frequency Response

Interconnectors (and generators) can choose to provide Frequency Response on a commercial basis. Under National Grid's ABSVD Methodology Statement, it can provide ABSVD to the SAA in relation to commercial Frequency Response.

The defect identified by P259 relates to Mandatory Frequency Response. However, because the SAA does not distinguish between the Balancing Services for which it receives ABSVD, P259 would also support commercial provision of Frequency Response by generators.



### 3 Why Change?

P259 aims to resolve an issue arising from the interaction of BSC processes and systems with a Grid Code requirement for new Interconnectors to be capable of providing Mandatory Frequency Response to the System Operator.

The Transmission Company submits Applicable Balancing Services Volume Data (ABSVD) equal to the Mandatory Frequency Response volumes it expects from a BM Unit to account for the potential Imbalance caused by provision of Frequency Response. However, the Transmission Company will not be able to identify which IEA BM Unit (Production or Consumption) Interconnector ABSVD data should be assigned to.

Incorrectly assigned ABSVD exposes the IEA to spurious Imbalance Charges unless corrected data is submitted. A working group under the Connection and Use of System Code (CUSC) considered the facilitation of the Grid Code Interconnector requirements under the CUSC and BSC and developed several potential BSC solutions to resolve this issue.

National Grid raised P259 to allow these options to be assessed and the optimal solution progressed. P259 also proposes that the BMRA report related Interconnector information.

#### Background

The Grid Code requires Interconnectors commissioned after 1 April 2005 to be capable of providing Frequency Response. This will apply to new Interconnectors, such as the UK-Netherlands Interconnector (BritNed) which is planned to begin commercial operations on 1 April 2011. Existing Interconnectors (i.e. IFA and Moyle) are exempt from the Frequency Response requirement.

The provision of mandatory Frequency Response is governed by the Grid Code and settled largely under CUSC governance. However, the BSC ('the Code') covers the allocation of Frequency Response energy imbalance volumes and the provision of market data.

The following two areas of the Code are impacted by the provision of Frequency Response by Interconnectors:

- The Settlement of Interconnector Error Administrator (IEA) BM Units; and
- The definition and reporting of related Interconnector data.

The Balancing Services Standing Group (BSSG), an industry standing group under CUSC governance, considered the Code changes required to allow Interconnectors to provide Frequency Response effectively and without being subject to any discrimination. The BSSG recommended that:

1. ABSVD should be assigned to the IEA BM Unit to which the SAA allocates the Metered Volumes corresponding to the delivered Frequency Response; and
2. The Interconnector equivalents of three existing data items (Final Physical Notification, Maximum Export Limit and Stable Export Limit) should be reported by the BMRA.

#### Implicit auctions

Any solution to fulfil the two recommendations set out above must also take account of 'implicit auctions', which is the proposed means of trading over Interconnectors; the European Commission has already imposed a requirement for day-ahead implicit auctions

on BritNed. This requirement is likely to be extended over the next few years to include other Interconnectors, such as the existing UK-France Interconnector (IFA).

The current understanding of BritNed operation is that volumes allocated by implicit auctions will be amalgamated with any errors being allocated to the Interconnector and then allocated to the IEA BM Units. The Interconnector Administrator will not include the implicit auction flows in the Metered Volumes submitted under BSCP04, 'BM Unit Metered Volumes for Interconnector Users'. The SAA will therefore automatically include these flows in the IEA Metered Volumes.

## Code defect

### Accurate allocation of Frequency Response imbalance volumes

The Transmission Company calculates the expected change in energy delivery from a Party due to the provision of Frequency Response. The Transmission Company then submits this calculated volume into Settlement as Applicable Balancing Services Volume Data (ABSVD). The submission of ABSVD avoids exposing a Party to any Imbalance Charges caused by providing Frequency Response (provided that they deliver the calculated volume; over- or under-delivery will still incur Imbalance Charges).

The current rules for the submission of ABSVD require the Transmission Company to assign all volumes to BM Units. However, in the case of an Interconnector providing Frequency Response the Transmission Company will not necessarily be in a position to determine which BM Unit ABSVD should be assigned to (i.e. the IEA BM Unit allocated the overall imbalance). The SAA determines which IEA BM Unit (Production or Consumption) receives the imbalance based on the overall direction (i.e. positive or negative) of the IEA volume (the error volume), and this can change from one Settlement Period to another.

The Code does not currently prohibit the provision of ABSVD for IEA BM Units. Therefore a 'do nothing' approach (as set out under Option 1, below) is potentially viable. However, this approach carries the risk of errors and resultant incorrect charging of Interconnectors, and could be considered an inefficient arrangement for provision of Frequency Response by Interconnectors as it places an additional burden on National Grid and affected Interconnectors compared with the arrangements for other providers of Mandatory Frequency Response (i.e. generators).

P259 argues that the Code should be amended so that Interconnectors that provide Frequency Response have the same certainty that they will not incur Imbalance Charges (provided they deliver the correct volume) that other providers of Frequency Response already have.

### Reporting by the Balancing Mechanism Reporting Agent

The Proposer also supports the BSSG's belief that the Code should be amended so that the BMRA is required to report data associated with Interconnectors. The BSSG believe equivalents of the following data should be reported for an Interconnector as a whole:

- Aggregate Final Physical Notification (FPN);
- Maximum Export Limit (MEL); and
- Stable Export Limit (SEL).

The Transmission Company currently sends this BM Unit information for generators to the BMRA. The BMRA publishes this information to market participants via the BMRS and TIBCO messaging software.



#### What are implicit auctions?

Implicit auctions allow buyers and sellers in each country to bid for Interconnector capacity on a day ahead basis.

For BritNed the existing exchange facility in the Netherlands will be extended to the UK.

FPN and MEL data is used to calculate payments for Frequency Response. FPN, MEL and SEL data will therefore help Interconnectors to understand their position in the same way that the equivalent data helps other Parties.

Currently, there is no mechanism to report equivalents of these values for an Interconnector as a whole. P259 contends that in order to promote effective competition in the generation and supply of electricity (i.e. in relation to provision of Frequency Response) there should be a mechanism in place for the BMRA to report equivalent values for Interconnectors required to be able to provide Mandatory Frequency Response.

## Rationale

The Proposer argued in the Modification Proposal that P259 will remove a barrier to efficient participation by Interconnectors in the market for Frequency Response and will remove an inconsistency between the Grid Code and the Code, and will thereby better facilitate Applicable BSC Objectives (b), (c) and (d) as follows:

- Objective (b): By allowing the System Operator to effectively utilise Frequency Response provided by Interconnectors where they are the most economic provider. If the proposed changes are not made Interconnectors will not be able to provide Frequency Response efficiently; and
- Objective (c): By promoting competition in the market for Mandatory Frequency Response provision. The proposed changes would place Interconnectors on a comparable competitive footing with other Parties providing Mandatory Frequency Response by giving them the same certainty that they will not incur undue Imbalance Charges (i.e. provided they deliver the correct volume) and providing them with equivalent data to help them understand their position.
- Objective (d): By removing a potential inconsistency between the Grid Code, which requires new Interconnectors to be able to provide Mandatory Frequency Response, and the Code, which is at best silent about how this is achieved. Clarifying the BSC arrangements around provision of Frequency Response by Interconnectors will reduce the risk of confusion and error in the administration of the ABSVD arrangements.

The Group also identified a benefit against Objective (a) when giving their initial views, which are detailed in section 8.

## Related changes

CAP182 is being considered under the CUSC to progress changes associated with the provision of Mandatory Frequency Response by Interconnectors. There is no direct interaction between P259 and CAP182, but if CAP182 is not approved National Grid will not be able to instruct any Interconnector to provide Mandatory Frequency Response.

National Grid needs to complete its own IS development work to support Mandatory Frequency Response by Interconnectors. This will be necessary whether or not P259 is approved, and therefore falls outside the BSC. National Grid will not complete this work till November 2011, but if CAP182 is approved National Grid will have the ability to manually instruct the provision of Mandatory Frequency Response by any Interconnector obligated to be able to provide this service (i.e. BritNed) prior to National Grid's IS changes being implemented. The defect identified by P259 therefore exists before November 2011.

## P259 solutions considered

The Group considered a number of solution options for the Settlement/ABSVD aspect of P259, and assessed the costs and impacts of some of these options, before developing the

P259 Proposed solution and potential Alternative solution as set out in this document. The solution options considered by the Group are summarised below.

Further details of the solutions issued for impact assessment (IA) can be found in the P259 Impact Assessment documentation and the results of the impact assessment are available from the [P259 page](#) of the ELEXON website.

The P259 Modification Proposal set out three potential solution options (one of which had two sub-options). One of these original options (option 2) is the P259 Proposed solution. The Group developed two further options, and subsequent to the impact assessment considered a solution suggested by BritNed in its impact assessment response. BritNed's suggestion is the potential P259 Alternative solution.

The aim of all these options is that the IEA is not at risk of exposure to Imbalance Charges due to an Interconnector's delivery of an instructed Frequency Response volume, only for over- or under-delivery of that volume (i.e. the same as for generators that provide Mandatory Frequency Response).

Note the Group has only developed one solution for the BMRS reporting aspect of P259, as set out in the sections describing the Proposed solution. This aspect of P259 is the same under both P259 and the potential Alternative.

Summary of P259 Settlement solution options				
Ref.	Description	IA	Source	Status/notes
1	<ul style="list-style-type: none"> <li>Do nothing under the BSC.</li> <li>NG and BritNed implement workarounds.</li> </ul>	X	Mod form	Not progressed under P259. No Mod needed. Basis of interim workaround.
2	SAA assigns ABSVD to correct IEA BM Unit.	✓	Mod form	P259 Proposed solution. Least overall complexity/cost; consistent with treatment of generators.
3a	<ul style="list-style-type: none"> <li>SAA allocates error volumes, and NG assigns ABSVD, to a single additional IEA BM Unit.</li> <li>Existing IEA BM Unit pair retained for Interconnector capacity auction volumes.</li> </ul>	X	Mod form	Not progressed. Group developed Option 4a to separate ABSVD from other volumes for transparency.
3b	<ul style="list-style-type: none"> <li>SAA allocates error volumes, and NG assigns ABSVD, to a single IEA BM Unit.</li> <li>Existing IEA BM Unit pair decommissioned; all quantities (error, Metered Volumes, ABSVD) assigned to single IEA BM Unit.</li> </ul>	X	Mod form	Not progressed. Group initially believed assigning ABSVD to same BM Unit as other quantities was not transparent enough, but subsequently developed similar solution as potential Alternative.
4a	<ul style="list-style-type: none"> <li>NG assigns ABSVD to new Interconnector User BM Unit and the IA reports an equal energy volume for this BM Unit.</li> <li>SAA nets off the BM Unit volume as normal from the Interconnector Metered Volume in determining</li> </ul>	✓	P259 Group	Not progressed. Low BSC Agent costs and element of future-proofing outweighed by impact/cost to National Grid and BritNed and inconsistent with treatment of generators.

	<ul style="list-style-type: none"> <li>Imbalance (error) volume.</li> <li>IEA/other Parties may register additional BM Unit for ABSVD/Frequency Response; IEA must do so if no other Party does.</li> </ul>			Additional transparency not needed as ABSVD published on BMRS.
4b	<ul style="list-style-type: none"> <li>NG assigns ABSVD to new Interconnector User BM Unit pair and the IA reports an equal energy volume for this BM Unit pair.</li> <li>SAA nets off the BM Unit volume as normal from the Interconnector Metered Volume in determining Imbalance (error) volume.</li> <li>IEA/other Parties may register additional BM Unit pair for ABSVD/Frequency Response; IEA must do so if no other Party does.</li> </ul>	✓	P259 Group	<p>Not progressed.</p> <p>As 4a; Low BSC Agent costs and element of future-proofing outweighed by impact/cost to National Grid and BritNed and inconsistent with treatment of generators. Additional transparency not needed as ABSVD published on BMRS.</p>
5a	<ul style="list-style-type: none"> <li>NG assigns ABSVD to new IEA BM Unit.</li> <li>SAA assigns ABSVD directly to IEA accounts.</li> <li>Multiple BM Units might be registered.</li> </ul>	X	P259 Group	<p>Not progressed.</p> <p>No IA due to excessive BSC Agent impact compared with other options.</p>
5b	<ul style="list-style-type: none"> <li>NG assigns ABSVD to new IEA BM Unit pair.</li> <li>SAA assigns ABSVD directly to IEA accounts.</li> <li>Multiple BM Unit pairs might be registered.</li> </ul>	✓	P259 Group	<p>Not progressed.</p> <p>Complex compared with option 2 and no additional benefits identified.</p>
6	<ul style="list-style-type: none"> <li>SAA allocates error volumes, and NG assigns ABSVD, to a single IEA BM Unit.</li> <li>Similar to option 3b, but achieved by using only Production IEA BM Unit (Consumption IEA BM Unit completely unused, or 'dormant') instead of decommissioning IEA BM Units (as under 3b).</li> <li>Mandatory for IEAs of Interconnectors required to be able to provide Mandatory Frequency Response, optional for IEAs of other Interconnectors.</li> </ul>	X	IA	Potential P259 Alternative solution 8.

In addition to the options set out in the table above, the Group also considered, less formally, a solution in which ABSVD would be assigned to the existing System Operator (SO) Interconnector User BM Unit pair. This is very similar to option 4b, to the extent it

can be considered a restricted version of 4b, i.e. the SO BM Unit pair is specifically used, rather than any standard Interconnector User BM Unit pair.

This would effectively mean Mandatory Frequency Response by Interconnectors would be treated as an SO-SO Trade. The ABSVD-equal energy volume assigned to the SO BM Unit pair would be netted off the overall IEA error volume, like 4a/4b. This option would avoid the BSC Agent impacts and would have an element of future-proofing (like 4a/4b), but is inconsistent with the Grid Code requirements for Interconnector provision of Mandatory Frequency Response as they currently stand (i.e. the Interconnector is responsible for the service, not the SO) and with the treatment of generators.

The SO BM Unit option was not formally impact assessed, but we have confirmed that the impacts and costs associated with its implementation would be similar to options 4a/4b.

The table below shows a summary of the results of the impact assessment of the various solution options set out above. Option 5a was originally included in the impact assessment but the Group agreed that it was not necessary to fully impact assess it because it became clear it would have a prohibitive central system impact compared with the other options.

The BSC Agent costs are based on the maximum levels of testing which may be conducted, and may reduce if we decide less testing is required. We will provide a final estimate of costs in the P259 Report Phase.

Summary of results of impact assessment of P259 solution options					
Solution option		2	4a	4b	5b
<b>Cost (£k)</b>	BSC Agent	75.3	1.7	1.7	75.4
	National Grid	0	100	190	0
	BritNed	0	100 - 120	100 - 120	0
<b>Lead time</b>	BSC Agent (months)	6	0.5	0.5	6
	National Grid (NG release)	Nov 2011	Nov 2011	Nov 2011	Nov 2011
	BritNed (months)	0	6 - 9	6 - 9	0

The Group considered that some options (e.g. 4a and 4b) which would be somewhat 'future-proof' to the extent that they could accommodate an arrangement where Interconnector Users were considered responsible for provision of Frequency Response, rather than Interconnectors. However, such solutions add significant impact and cost to implementation by National Grid and those Interconnector Administrators that are affected.

The Group also considered that there could be other outcomes of the Third Package with an outcome not accommodated by any of the solution options, so considering how future-proof the solutions are was of limited value. The Group therefore concluded that it was most pragmatic to progress the solution option that is least impact and cost against the current baseline.

The Group agreed that it was not feasible to do anything further to take into account the effect of the Third Package, or any other changes in this area, in the absence of a more definitive statement from the government on its intentions.

In the course of its discussion of P259, the Group considered whether the solution options might impact the distribution of the residual IEA Imbalance. The Group initially believed

that the Imbalance was 'smeared' across all Interconnector Users for an Interconnector under Interconnector rules outside the BSC, and were concerned that some of the options could affect this process. However, BritNed subsequently confirmed that this was not the case and would not be the case under P259; the IEA was responsible for the entire Imbalance Volume and all Imbalance Charges would fall solely on the IEA (Interconnector User volumes are not affected by the Imbalance).

## Avoided costs

If P259 is not implemented National Grid would need to put in place a workaround solution for ABSVD relating to Interconnectors providing Mandatory Frequency Response. The impact of this on National Grid (and the associated cost) is dependent on a number of variables that are not yet confirmed:

- The workaround process used;
- The number of instances of an Interconnector being instructed to provide Mandatory Frequency Response; and
- The number of Interconnectors that are required to be capable of provision of Mandatory Frequency Response.

However, National Grid has estimated the cost of operating the workaround for one interconnector will be in the range £14,000 - £55,000 per annum. This can be multiplied by the number of Interconnectors required to be capable of provision of Mandatory Frequency Response.

This cost will apply (pro-rated) to any period before P259 Implementation in which National Grid can instruct an Interconnector provide Mandatory Frequency Response.

Implementation of P259 Proposed or the potential Alternative would avoid the need for the National Grid workaround, i.e. an estimated saving of £14,000 - £50,000 per annum would be delivered (for operation with one Interconnector required to be able to provide Mandatory Frequency Response).

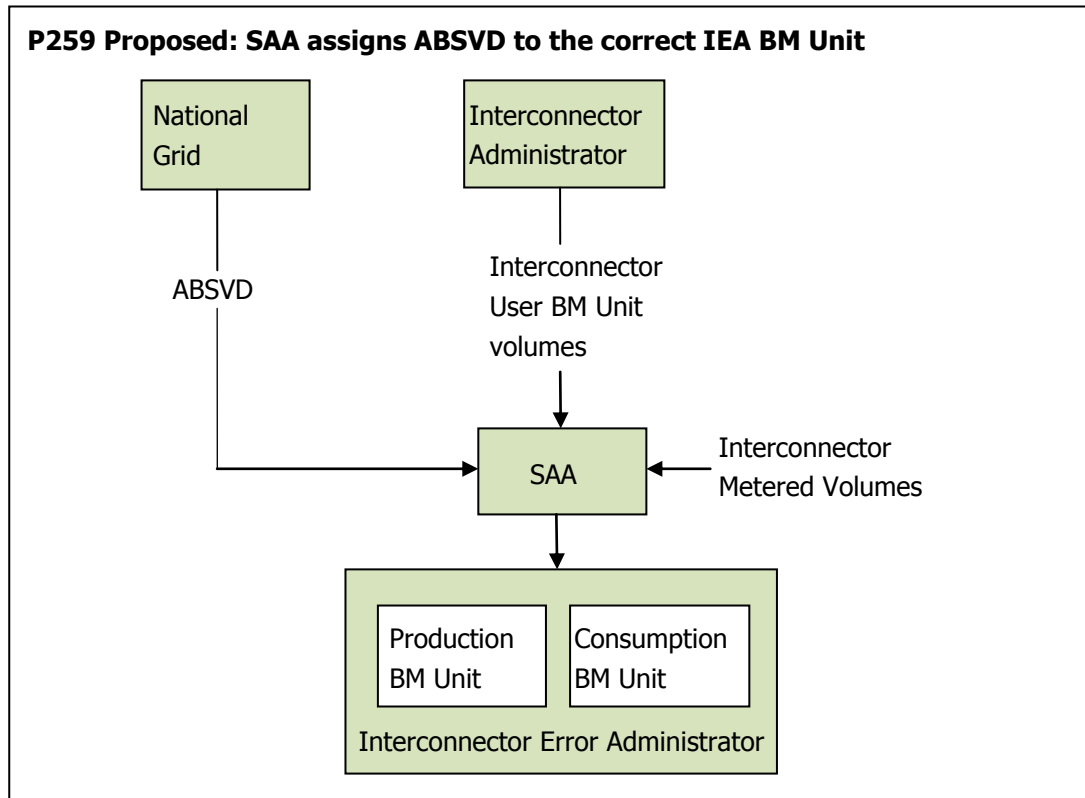
In addition there may be costs imposed upon the Interconnector Error Administrator for performing additional manual checks to determine whether ABSVD has been correctly assigned.



### Settlement: SAA assigns ABSVD to the correct IEA BM Unit

This solution was suggested in the P259 Modification Proposal (as option 2). Currently NG would assign ABSVD to the IEA but, as identified by P259, cannot determine with certainty the correct IEA BM Unit (Production or Consumption) to which the ABSVD should be assigned.

Under the P259 Proposed solution the SAA assigns ABSVD to the correct IEA BM Unit of the existing IEA BM Unit pair (either Production or Consumption), such that it is correctly taken into account in the IEA Metered Volume (i.e. the error volume, net of Interconnector User volumes).



**Requirement 1:** NG will notify the SAA of the appropriate ABSVD volume for the IEA with no regard to the IEA BM Unit to which it should be correctly allocated. As a default NG will notify the ABSVD against the Production BM Unit, in line with the process for generators.

**Requirement 2:** The SAA will determine which IEA BM Unit should be allocated the ABSVD (i.e. the same BM Unit that is allocated the IEA BM Unit Metered Volume) and allocate the ABSVD to that BM Unit. The SAA will then carry out Settlement calculations taking into account the ABSVD, in the same way it would at present.

The SAA performs the determination of which BM Unit to assign ABSVD to as part of each Settlement Run, i.e. as part of the Initial Interim (II) run, again at the Settlement Final (SF) run, and at each subsequent Reconciliation Settlement Run. Note that the result might change from one run to the next due to amendment of the physical meter readings from the Central Data Collection Agent (CDCA) or the deemed meter readings from the IA.

**Requirement 3:** The Balancing Mechanism Reporting Agent (BMRA) will report the ABSVD data as provided by National Grid. The ABSVD would therefore be reported against the Production BM Unit, regardless of whether the SAA ultimately assigns it to the Consumption BM Unit in subsequent Settlement Runs. This is consistent with the concept that the data reported on BMRS is indicative.

## Reporting: BMRS reports Interconnector information

The CRA will allow the Transmission Company (National Grid) to register a 'pseudo-BM Unit' representing the Interconnector as a whole. Such a pseudo-BM Unit would be separate to any existing BM Unit, e.g. the IEA BM Unit pair. The pseudo-BM Unit will be registered using normal BSCP15 processes, but will not have the same obligations as a real BM Unit, e.g. it will not have Aggregation Rules or Metered Volumes associated with it.

The CRA will issue this Registration data to the BMRA, ECVAA and Funds Administration Agent (FAA) using the existing CRA-I015 flow. The BMRA will validate the Registration data using the existing business rules.

The BSC will allow the Transmission Company to send to the BMRA, via the BMRA-I004 flow, the Interconnector equivalents of any data which is provided for other BM Units in this flow. This is likely to initially include (but will not be limited to) equivalent FPN, MEL and SEL values (hereafter called pseudo-FPNs, pseudo-MELs and pseudo-SELs, respectively). The BMRA will process the equivalent items in the same way as for other BM Unit data values, i.e. BMRS will report these values on the BM Unit Data screen and the TIBCO message BMRA-I004 will include them.

The Site Help Section on the BMRS will explain the concept of pseudo-BM Units that represent the Interconnector as a whole, and will also explain the meaning of the data and the extent to which this is equivalent to generator data, e.g. generator FPN, MEL and SEL. Since the Transmission Company will register the pseudo-BM Unit, pseudo-FPN data will not impact Trading Charges or Credit Cover requirements for any Party because the Transmission Company is not subject to Imbalance Charges or Credit Cover requirements.

The Group agreed that the reporting solution should be as flexible as possible to avoid a BSC Modification being required in the future to enable the Transmission Company to report other information or data relating to other Interconnectors. The decision on what Interconnector data should be reported using a pseudo-BM Unit falls outside the BSC (under the CUSC/Grid Code) so this data may change over time. For example, the CAP182 working group is discussing the requirements for Interconnector equivalent MEL.<sup>1</sup>

Using 'pseudo' BM Units, existing BM Unit files and existing BMRS displays minimises the impact on the BMRS and allows changes in the data items reported. National Grid will provide values against the FPN, MEL and SEL (and possibly other) fields and the BMRA will report these using existing processes. If the data changes over time, the explanation in BMRS Site Help Section will be updated to reflect this.

This approach also has the advantage that, as an 'enabling' solution, it will not delay the implementation of P259 (and therefore the Settlement side of the solution), i.e. it is not necessary to wait until National Grid can provide the data to the BMRS in November 2011 (when it has completed its wider systems work).

The Code will not restrict the BMRS solution to only those Interconnectors required to be capable of Mandatory Frequency Response provision. It may be considered beneficial in future to report data for other Interconnectors, e.g. for commercial Frequency Response, so it is sensible that the BSC not restrict the reporting of data for Interconnectors.

Therefore P259 will enable the Transmission Company to create a pseudo-BM Unit for any Interconnector and report any Interconnector-equivalent data against that pseudo-BM Unit. Any restrictions to this would sit outside the BSC.

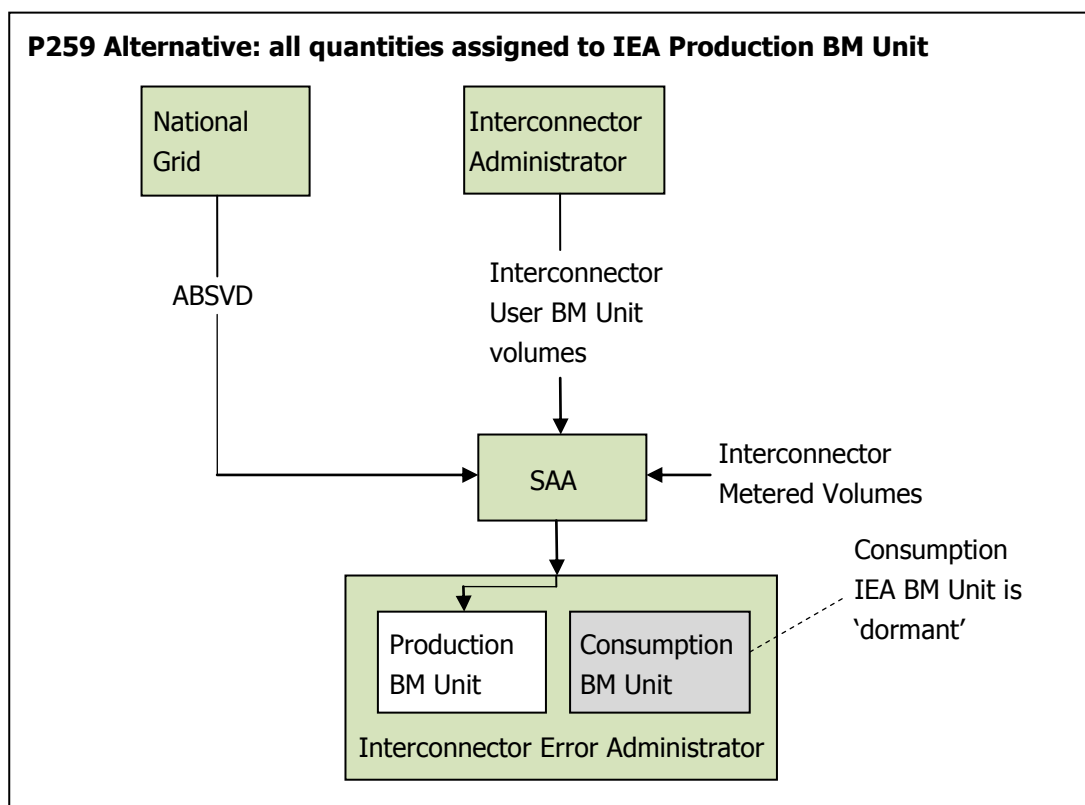
<sup>1</sup> At the current time, National Grid indicates that the equivalent FPN data will be a minute-by-minute delivery programme for the Interconnector, MEL will be its capability (likely to be an unchanging value unless there is an outage) and SEL will be lower stable limit for power imports into GB (resubmitted on any change). This may change depending on the outcome of CUSC/Grid Code discussions, and National Grid may also decide to report other equivalent data.

### Settlement: all quantities assigned to IEA Production BM Unit

The potential P259 Alternative solution is similar to the option 3b solution that was suggested in the P259 Modification Proposal. However, instead of the existing IEA BM Units being 'decommissioned' and replaced by a single BM Unit (as under 3b), the Alternative would require that the Production IEA BM Unit only is used, while the Consumption IEA BM Unit is completely unused (or 'dormant').

Using only the Production BM Unit means National Grid simply allocates ABSVD to this BM Unit; ABSVD cannot be incorrectly allocated so no action is required by the SAA to ensure it has been correctly assigned and/or reassign the ABSVD. This arrangement would be mandatory under the BSC for Interconnectors required to be able to provide Mandatory Frequency Response, but optional for other Interconnectors. IEAs of Interconnectors not required to be able to provide Mandatory Frequency Response (IFA and Moyle) would therefore not be affected unless they chose to operate in this manner.

The potential Alternative solution was suggested in BritNed's response to the P259 impact assessment. This response set out BritNed's reasons for suggesting this solution and its benefits, in their view, over other options. BritNed's response is available on the [P259 page](#) of the ELEXON website.



**Requirement 1:** An IEA of an Interconnector required to be able to provide Mandatory Frequency Response, and an IEA of any other Interconnector that chooses to use this solution, will use only their Production BM Unit, with its Consumption BM Unit dormant (i.e. completely unused). Interconnectors not required to be able to provide Mandatory Frequency Response, and who do not opt in to this solution, will continue to use the existing pair of IEA Production BM Unit and Consumption BM Unit.

The SAA will treat IEAs differently depending on whether they operate under the existing arrangement (active Production and Consumption BM Units) or under the P259 Alternative IEA BM Unit arrangement (only Production BM Unit active). If an IEA uses the Production

BM Unit/Account only (due to obligation or choice) the SAA will always allocate the Interconnector error volume to the Production BM Unit.

**Requirement 2:** NG will notify the SAA of the appropriate ABSVD volume to be assigned to the Production IEA BM Unit. As this is the only IEA BM Unit for Interconnectors required to be able to provide Mandatory Frequency Response this will result in correct allocation of ABSVD for Interconnector Mandatory Frequency Response.

### Reporting: BMRS reports Interconnector information

The BMRS reporting aspect is the same under the potential Alternative as under the P259 Proposed solution, i.e. quantities will be reported for a 'pseudo-BM Unit' representing the Interconnector as a whole registered by the Transmission Company (National Grid). See Proposed solution for full details.

#### Question 5

Are there alternative solutions that the Modification Group has not identified that it should consider? If so please describe the solution(s), including your rationale.

## 6 Impacts & Costs

The P259 Proposed solution was included in the impact assessment conducted by Parties, National Grid and the BSC Agent Service Providers (see Section 3). The potential Alternative was not included in this impact assessment; we will assess its impacts and costs to BSC Agents in parallel with this consultation.

We believe that implementation costs for the Alternative solution are likely to be no greater than the cost associated with P259 Proposed, and may be less. The Group's considerations and initial views are based on the costs being comparable with the Proposed, and are subject to further information on impacts and costs, as well as the results of this consultation.

The full ELEXON internal impact assessment will be carried out in parallel with this consultation. However, we have considered the timescales and likely project costs for implementation of P259 and this has been taken into account in the P259 implementation approach.

We do not believe that the potential Alternative solution will have any impact on Parties. You may include in your consultation response any impact of the P259 Proposed or potential Alternative solutions that has not been identified and which you believe the Group should consider.

The cost saving associated with avoiding use of the National Grid workaround solution (Section 3) should be noted when considering the costs and impacts set out below.

### Costs - P259 Proposed

#### ELEXON Service Provider cost

£75,000

#### Indicative industry costs

National Grid <sup>2</sup>	Zero
Interconnector required to provide Mandatory Frequency Response	Zero
Other Parties	Zero

### Impacts - P259 Proposed

#### Impact on BSC Systems and process

BSC System/Process	Potential impact
BMRA	Reporting data associated with provision of Frequency Response by Interconnectors.
SAA	Option 2: SAA assigns Interconnector ABSVD to IEA BM Unit that received the Metered Volume.

#### Impact on BSC Parties and Party Agents

Interconnector Administrators, Interconnector Error Administrator and BSC Agents would be impacted.

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<sup>2</sup> There are significant National Grid has costs associated with the provision of ABSVD for Interconnectors, but this is not attributable to P259.

#### Impact on Transmission Company

Transmission Company would need to register Interconnectors pseudo-BM Units and provide data for reporting.

#### Impact on ELEXON

Implementation	As part of P259 implementation ELEXON's Change Management Team would make Code changes and manage BSC System changes.
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#### Impact on Code

Code section	Potential impact
Q, Balancing Mechanism Activities	Amend Q6.4 to specify that Applicable Balancing Services Volume Data may be provided for BM Units and/or Interconnectors.
T, Settlement and Trading Charges	Add new paragraph to T4.1 requiring the SAA to allocate Interconnector ABSVD to the IEA BM Unit that received the Metered Volume (i.e. Production BM Unit where $QM_{ij}$ is positive and Consumption BM Unit where $QM_{ij}$ is negative).

#### Impacted configurable items

SAA Design Specification

SAA System Specification

SAA User Requirements Specification

### Implementation Approach

The Group agreed that P259 should be implemented on a Settlement Day basis, i.e. the P259 provisions would apply for all Settlement Days on and after the Implementation Date. Any Mandatory Frequency Response provided by BritNed for Settlement Days before P259 implementation then would be dealt with through the National Grid/BritNed manual workaround for all relevant Settlement Runs. Settlement Day implementation is the usual approach for implementation of BSC modifications.

The required BSC Agent lead times make a February 2011 implementation unfeasible. The original reason that the Proposer suggested implementation in February 2011 was so that P259 would be in place by the time BritNed becomes operational. The latest advice from BritNed is now that it will become operational on 1 April 2011.

The Group therefore recommends the following implementation approach for P259:

- Implementation on 1 April 2011 if approval is received from the Authority before 1 November 2010; or
- The next available BSC Release occurring no less than six months after approval is received from the Authority, e.g. the next two available Releases after April 2011 would be 30 June 2011 (if approval is received by the end of December 2010) and 4 November 2011 (if approval is received by the end of December 2010).

The open-ended fallback option of the next available Release acknowledges that a decision on P259 may be delayed until the outcome of the EU Third Package work is known. The outcome and timescales of this work are controlled by the government and outside the control of the Authority, leading to uncertainty as to when a decision on P259 may be made.

BritNed goes operational on 1 April 2011 and even though National Grid will not have completed its wider systems development (which is outside P259 and the BSC) for Mandatory Frequency Response from Interconnectors until November 2011, it could use workaround processes to instruct BritNed to deliver Mandatory Frequency Response from 1 April 2011 onward. In this case National Grid and BritNed would, from 1 April 2011 until P259 is implemented, use a workaround solution to ensure ABSVD is assigned to the correct IEA BM Unit.

A description of this workaround, and details of the costs/effort involved, is provided in National Grid's impact assessment of P259. Implementing P259 on 1 April 2011 would align with the start of BritNed operation, and avoid any need for use of a workaround.

P259 has no direct impact on any participants other than National Grid, BritNed, ELEXON and BSC Agents, so delivering P259 outside of a normal Release would not affect Parties.

The costs of a 1 April 2011 implementation will not be significantly higher than those of implementation in the 30 June 2011 Release (or another Release) because ELEXON would manage an April delivery as an extended February 2011 Release (i.e. some of the work and overheads would be coordinated with the February Release). There is no guarantee that other system changes will form part of the June 2011 (or another) Release, so implementation in a BSC Release could still mean that P259 picks up all the project overheads of that Release.



ELEXON would compress its implementation timetable by one month (from 6 to 5 months) to achieve implementation on 1 April 2011. This would slightly increase the project risk, but the risk to project delivery would be manageable, and would only potentially affect National Grid and BritNed.

If the decision date for implementation on 1 April 2011 is missed the implementation timescale would default to six months for any subsequent Release as it would not be necessary to deliver any compression.

We have not identified any significant disadvantage of implementation of P259 on 1 April 2011, and has the benefit that it delivers extra flexibility to the Authority and could avoid any need for the use of an interim workaround solution by National Grid and BritNed. The Group welcomes views on this recommended approach.

The potential alternative to implementation on 1 April 2011 is implementation in a fixed BSC Systems Release on 30 June 2011 if P259 is approved by the end of December 2010 or, if this decision date is missed, the next available BSC Release occurring no less than six months after approval.

Inclusion in a BSC Systems Release is the usual approach for BSC System changes, with the aim of minimising risk and costs by grouping system changes together in fixed Releases and also to give industry participants certainty regarding when BSC changes will be made and hence when they will need to make any related changes to their own systems.

However, we believe implementation of P259 outside a Release would be acceptable since it would not affect most Parties (only National Grid and BritNed) and there are no significant project cost considerations.

#### Question 5

Do you agree with the Group's recommended implementation approach? If not, what is your preferred implementation approach and why?

### Interaction with National Grid system development and CAP182

National Grid needs to make changes to its systems to support the use of Mandatory Frequency Response from Interconnectors. This work will not be completed till November 2011. National Grid can still call on BritNed to provide Mandatory Frequency Response before November 2011, but will need to use manual processes to do so. These manual processes, and the work to automate them in National Grid's systems, will be incurred regardless of whether P259 is approved (to comply with its Grid Code requirements) and therefore fall outside the BSC.

In order to utilise Mandatory Frequency Response from Interconnectors, National Grid also needs CUSC change CAP182 to be approved. CAP182 and P259 are progressing to roughly equivalent timescales.

Finally, National Grid's necessary system development means that it would not be able to provide Interconnector data to the BMRA before November 2011.

However, these wider considerations do not mean that it is necessary to delay the implementation of P259. This is because:

- The Settlement aspect of P259 is 'enabling' in the sense that it changes BSC Systems to correctly allocate ABSVD to IEA's whenever National Grid starts providing this in practice. It therefore does not matter if P259 is implemented ahead of CAP182 (the P259 and CAP182 solutions have no direct interaction).
- The BMRS aspect of P259 is also 'enabling' because it allows National Grid to provide pseudo BM Unit data for Interconnectors whenever National Grid is a position to do so, regardless of what this data is and if it changes over time. It therefore does not matter if P259 is implemented in advance of National Grid completing its own systems work which it needs to provide the data to the BMRA. Once the constitution of the data is agreed (a discussion under the Grid Code/CUSC outside the BSC) and National Grid is ready to provide it, then the BMRA will publish the data and an explanation of its constitution in the BMRS Help Text. The BMRS aspect of the P259 solution uses existing BM Unit file structures and therefore has minimal costs to ELEXON and BSC Agents.

### P259 Proposed Modification

The Group agreed that the solution assessed as P259 solution option 2 should be progressed as the P259 Proposed Modification because it has zero impact and associated cost for implementation of P259 by the Transmission Company and BritNed; other options considered had significant impacts on the Transmission Company and BritNed. Though the central systems impact is greater under this solution than some other options, the Group did not believe that it was of sufficient magnitude to be considered an impediment. None of the solutions assessed, including the P259 Proposed solution, had any impact on Parties not associated with an Interconnector required to have the capability to provide Mandatory Frequency Response.

The Group agreed that the solution chosen to be the P259 Proposed Modification was superior to the other options considered because of the lower overall impact/complexity and cost of its implementation. The P259 solution allows the earliest implementation of the solutions impact assessed, which would allow the use of a workarounds by National Grid and Brit Ned to be minimised.

The Group agreed that the Proposed solution would treat Interconnectors equivalently to generators that provide Mandatory Frequency Response, and were satisfied that it would provide sufficient transparency around the provision of Mandatory Frequency Response by Interconnectors. They believed the level of transparency would be equivalent to that of generators providing Mandatory Frequency Response, and noted that ABSVD volumes are already published on the BMRS.

BritNed's response to the P259 Impact Assessment confirmed that the Proposed solution would not impact the ability to conduct trading over Interconnectors via implicit auctions. It would not impact Interconnectors not required to have the capability to provide Mandatory Frequency Response.

The Group confirmed the BMRS reporting aspect of P259 Proposed included in the P259 impact assessment. They agreed that it would be best to not restrict under the BSC what information National Grid can report for the pseudo-BM Units registered for Interconnector reporting. This would give flexibility to report other quantities that may be considered useful in future by allowing National Grid to determine what quantities should be reported. The BSC would require that any quantities reported over the BMRS have sufficient explanation to make clear the difference with standard BM Unit information.

The Group considered the extent to which the P259 Proposed Modification, and their considerations in developing the Proposed solution, had taken account of the EU Third Package. The Group noted that it was still unknown how the Third Package would be implemented in the UK and what effect, if any, it would have on the provision of Mandatory Frequency Response by Interconnectors. The Group believes that it remains a distinctly possible, if not probable, that the Third Package could result in Interconnectors being designated as Transmission System Operators, which would remove the obligation to be capable of provision of Mandatory Frequency Response.

Some of the other options considered by the Group were arguably more future-proof than the Proposed solution, as they offered the flexibility to accommodate arrangements where Interconnector Users were responsible for provision of Mandatory Frequency Response with little or no change. However the Group did not believe any of the solutions were future-proof against all possible scenarios that could result from the Third Package. Given this, and taking into account the uncertainty around the implementation of the Third Package, the Group believed that the P259 Proposed solution was the most prudent choice

as it has the least overall impact/complexity and cost, and consequently the shortest implementation lead time.

However the Group noted they had been specifically asked to take into account the Third Package as much as possible, and therefore agreed to include a consultation question to determine whether Parties had any views on the Group's consideration in this area. Note that the Group has not addressed the Third Package directly, but rather tried to take into account the uncertainty around how it will be implemented and the possible implications for provision of Mandatory Frequency Response.

#### Question 6

Do you agree that the solutions and implementation approach developed by the Group take as much account of the Third Package as is reasonably possible? If not, please identify what further action you believe the Group should take.

### Potential P259 Alternative Modification

The Group noted that BritNed's impact assessment response suggested another P259 solution option. The Group agreed to include this solution in the P259 consultation as a potential P259 Alternative Modification.

The potential P259 Alternative Modification solution is set out in full in this consultation document. It is similar to option 3b in the P259 Modification Proposal.

Under the potential Alternative Modification error volumes and ABSVD would be assigned only to the IEA's Production BM Unit and Energy Account. However, instead of decommissioning the other IEA BM Unit (as under 3b), the Consumption IEA BM Unit and Energy Account would remain in central BSC Systems but would be unused ('dormant'). This arrangement would be mandatory for Interconnectors required to be able to provide Mandatory Frequency Response, but optional for other Interconnectors.

BritNed believe that their suggested solution would be simpler because allocation of all energy volumes and ABSVD to the IEA Production Account would remove the need for a decision point in the allocation of these quantities. BritNed believed this would reduce the need for IS functionality development by National Grid, BSC Agents and Interconnectors; this would not be the case for P259 (the Proposed Modification would be no more complex to implement for National Grid and Interconnectors, and the BSC Agent impact is expected to be comparable) but the use of only a single IEA BM Unit might tend to generally simplify developments for Interconnectors.

BritNed also note that this solution would allow an Interconnector to net a shortfall in provision of Frequency Response against any over delivery from normal operation. Generators that provide Mandatory Frequency Response can net in this way, so this would be equivalent treatment for Interconnectors. BritNed acknowledge that the P259 Proposed solution would also facilitate such netting, though they believe some of the other solution options considered would not have.

The Group agreed that BritNed's belief that their suggested solution would have benefits over the P229 Proposed solution warranted its inclusion as a potential Alternative. This would allow a BSC Agent impact assessment to be conducted and the views of Parties ascertained through the P259 consultation. The Group noted that any extra benefits from this option were separate to resolving the defect identified by P259 and relate to other efficiencies for Interconnectors in the management of their processes. However, some members considered that, if there was no extra cost, this would be beneficial and not inappropriate.

However, some Group members were not convinced that the IEA BM Unit arrangements should be changed in the manner suggested. These members did not have specific concerns, but believed that further consideration should be given to the underlying reasons for the current structure of the IEA BM Units/Energy Accounts (i.e. the principle of separation of Production and Consumption) and the ramifications of altering the structure, before changing these arrangements. The Group therefore agreed to include a consultation question to ascertain whether Parties had any views on this and could identify any specific issues or risks associated with the Alternative solution.

#### Question 7

Do you believe that there are any issues or risks associated with the potential P259 Alternative solution due to its use of only the Production IEA BM Unit/Energy Account, with the Consumption IEA BM Unit/Energy Account dormant?

#### Question 8

Are you associated with an existing (pre-2005) Interconnector Error Administrator? If so, do believe there would be benefits of opting in to the P259 Alternative solution, and what would they be?

### Initial views against the Applicable BSC Objectives

The Group considered the P259 Proposed Modification and gave their initial views on whether this solution would better facilitate the achievement of the Applicable BSC Objectives compared with the current Code baseline. Note all Group members supported all arguments put forward.

#### Initial assessment of benefits of P259 Proposed against the Applicable BSC Objectives

Description of Objective	Identified benefit
a) Efficient discharge of the obligations of the Transmission Licence.	<p>Avoids disadvantaging Interconnectors that provide Mandatory Frequency Response compared with generators, which could be considered discriminatory.</p> <p>The reporting aspect of P259 would allow National Grid to report equivalent data for Interconnectors over the BMRS which would remove discrimination between Interconnectors and other providers of Mandatory Frequency Response.</p> <p>Enables more efficient operation by National Grid by removing the need for workaround arrangements.</p>
b) Efficient, economic and co-ordinated operation of the GB transmission system.	<p>Enables the System Operator to effectively utilise Interconnector Mandatory Frequency Response where the most economic option.</p> <p>Without P259 Interconnector provision of Frequency Response is less efficient and/or the SO incurs a workaround cost for instructing an Interconnector to provide Mandatory Frequency Response; this could impact the SO's decision to instruct an Interconnector to provide Frequency Response where it would otherwise have been the most economic option.</p> <p>Enables more efficient operation by National Grid by removing</p>

	the need for workaround arrangements.
c) Promoting effective competition in the generation and supply of electricity and in the sale and purchase of electricity.	<p>Promotes competition in Frequency Response provision: puts Interconnectors on a comparable competitive footing with other Mandatory Frequency Response providers:</p> <ul style="list-style-type: none"> <li>• Same certainty they will not incur undue Imbalance Charges ;</li> <li>• Equivalent data published to help them understand their position; and</li> <li>• Parties have access to reported data equivalent to that for other providers.</li> </ul>
d) Promoting efficiency in the implementation and administration of the balancing and settlement arrangements.	<p>Removes potential inconsistency between the Grid Code (which requires new Interconnectors to be able to provide Mandatory Frequency Response) and the Code (which is at best silent on this).</p> <p>Clarifying BSC arrangements around Mandatory Frequency Response provision by Interconnectors reduces the risk of confusion and error in administration of the ABSVD arrangements.</p> <p>Enables more efficient Settlement of energy volumes associated with the provision of Mandatory Frequency Response by Interconnectors.</p>

### Question 1

Would Proposed Modification P259 help to achieve the Applicable BSC Objectives compared to the current baseline?

Some Group members did not believe they were able to give their views against the potential P259 Alternative Modification without an impact assessment of this solution and the views of Parties (particularly Interconnectors not required to be able to provide Mandatory Frequency Response). The Group therefore gave their initial views against the Applicable BSC Objectives for the P259 Proposed Modification only.

The Group invites the views of Parties on whether the potential Alternative solution would facilitate achievement of the Applicable BSC Objectives compared with the current baseline and P259 Proposed. The Group is keen to get the views of Parties associated with existing Interconnectors, particularly with regard to whether they believe they would find it beneficial to opt in to the potential P259 Alternative solution.

### Question 2

Would the potential Alternative Modification P259 help to achieve the Applicable BSC Objectives compared to the **current baseline**?

### Question 3

Would the potential Alternative Modification P259 help to achieve the Applicable BSC Objectives compared to the **Proposed Modification**?



Impact assessment responses are available on the [P259 page](#) of the ELEXON website.

## Appendix A: Frequency Response and ABSVD

### What is Frequency Response?

The balance between system demand and total generation determines overall system frequency. An action undertaken to keep system frequency within specific required limits is Frequency Response. This section provides an overview of Frequency Response, but further information can be found on the National Grid website<sup>3</sup>.

System frequency continuously changes, and is determined and controlled by the balance between system demand and total generation. If demand is greater than generation, the frequency falls; if generation is greater than demand, the frequency rises.

National Grid has a licence obligation to keep frequency within one percent of the nominal system frequency of 50Hz, apart from in exceptional circumstances. It must ensure that sufficient generation (or demand) can be called on to manage frequency variations.

One of the methods National Grid uses to manage system frequency is Mandatory Frequency Response, which is a Balancing Service. Mandatory Frequency Response is an automatic change in active power output in response to a frequency change. All generators that fall under the relevant requirements of the Grid Code must have the capability to provide Mandatory Frequency Response; the capability to provide this service is a condition of connection for generators connecting to the GB Transmission System. Large embedded generators are also subject to this requirement.

Service providers delivering Mandatory Frequency Response are paid in accordance with the CUSC. There are two types of payment:

- Holding Payment (£/h) is made for capability to provide response when instructed. Generators submit holding prices on a monthly basis<sup>4</sup>; and
- Response Energy Payment (£/MWh) remunerates the amount of energy delivered to and from the system when providing Frequency Response.

Such payments for the delivery of Mandatory Frequency Response volumes are dealt with under the CUSC (i.e. outside the BSC), but generators' energy volumes in the BSC Settlement process are adjusted using ABSVD so Mandatory Frequency Response is taken into account when determining imbalance under the BSC. This ensures generators are not exposed to BSC Imbalance Charges for providing Mandatory Frequency Response.

### How does ABSVD work?

ABSVD is applied in relation to other Balancing Services, but the following example considers its use only in relation to Mandatory Frequency response. The National Grid Applicable Balancing Services Volume Data Methodology Statement sets out how ABSVD is applied for various Balancing Services, including Mandatory Frequency Response<sup>5</sup>.

The numbers in this example match the example set out in section 4.1 of the National Grid ABSVD Methodology Statement, which provides the calculations in greater detail. The example shows a simple situation in which there is no Bid Offer Acceptance (BOA) activity and the volume of Frequency Response delivered matches that instructed by National Grid.

<sup>3</sup> <http://www.nationalgrid.com/uk/Electricity/Balancing/services/frequencyresponse/>

<sup>4</sup> via the Frequency Response Price Submission System (FRPS)

<sup>5</sup> <http://www.nationalgrid.com/NR/rdonlyres/98D3633C-A871-4544-A9D0-8CF45F9ADD34/16056/ABSVDv23effectivefrom01apr07final.pdf>



This example also simplifies the graphical representation of the situation to neglect the shape of the energy volumes, in order to clarify the illustration of the quantities involved; quantities are constant over the half-hour Settlement Period, rather than varying.

Consider a generator that delivers Mandatory Frequency Response determined to be a volume of 2.5MWh (i.e. in the relevant half hour an additional 2.5MWh of energy was produced as a result of providing the response).

BM Unit parameters for relevant Settlement Period	
Parameter	Value
Contracted Position	137 MWh
Final Physical Notification	145 MWh
Metered Production	147.5 MWh
Applicable Balancing Services Volume	2.5 MWh
Transmission Loss Multiplier (TLM)	0.95
Bid Offer Acceptances (BOAs)	0 MWh

If the Party operated a single BM Unit with the parameters in the table below for this settlement period, the impact on central settlement would be as set out below (all calculations are in accordance with Section T of the BSC).

The Credited Energy Volume is the Metered Production multiplied by the TLM, net of the volumes of any Subsidiary Parties Volumes (in this example all energy is credited to the lead party, so the sum of Credited Energy Volumes over the Energy Accounts of Subsidiary Parties is zero):

$$\text{Credited Energy Volume} = 147.5 \text{ MWh} \times 0.95 - 0 \text{ MWh} = 140.13 \text{ MWh}$$

Here the Account Credited Energy Volume is equal to the Credited Energy Volume, i.e. 140.13MWh. The Balancing Services Volume is equal to the Applicable Balancing Services Volume in this example:

$$\text{Balancing Services Volume} = 2.5 \text{ MWh}$$

The Account Period Balancing Services volume is the product of Balancing Services Volume and the TLM:

$$\text{Account Period Balancing Services} = 2.5 \text{ MWh} \times 0.95 = 2.38 \text{ MWh}$$

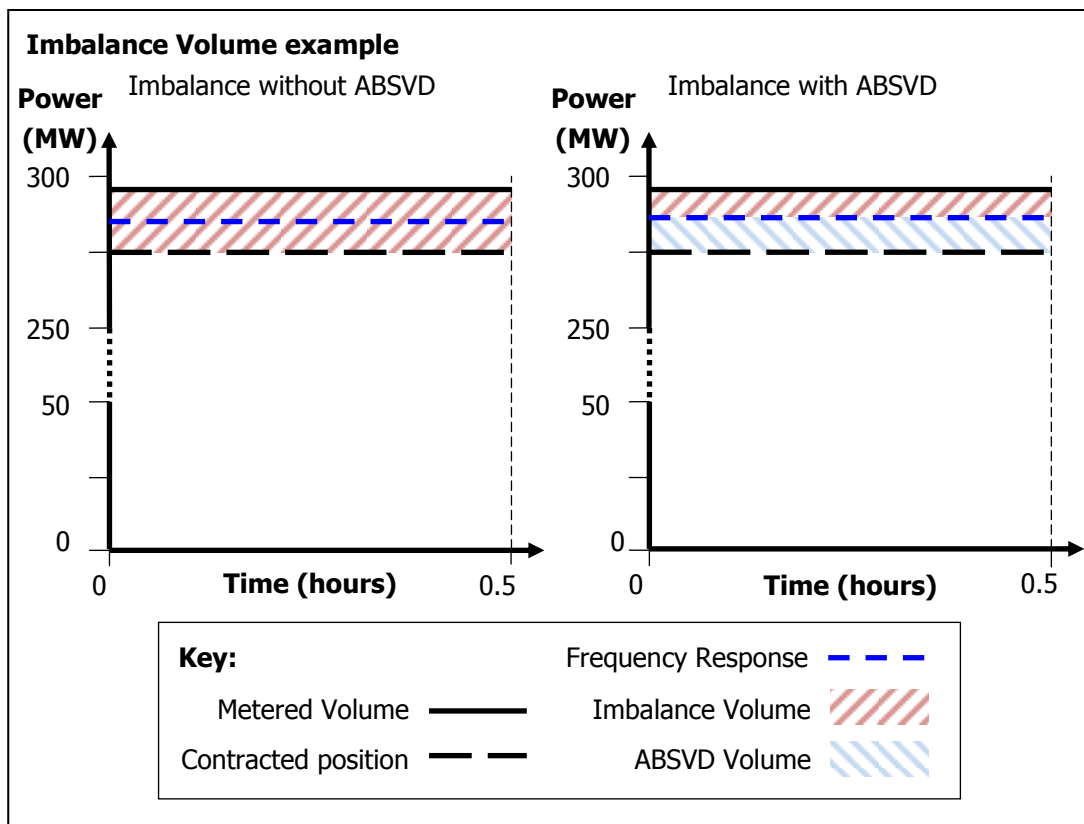
The Account Energy Imbalance Volume is the Credited Energy Volume minus the Account Period Balancing Services and Contracted Position:

$$\begin{aligned} \text{Account Energy Imbalance Volume} &= 140.13 \text{ MWh} - 2.38 \text{ MWh} - 137 \text{ MWh} \\ &= 0.75 \text{ MWh} \end{aligned}$$

So in this example the account would be in imbalance by 0.75 MWh and would receive payment for that 0.75 MWh at System Sell Price.

To illustrate the impact of ABSVD assigned by National Grid to generators it instructed to provide Frequency Response, consider the example without the Applicable Balancing Services Volume (but with the generator still providing Frequency Response). The Party's account would be in imbalance by 3.13 MWh (i.e. 140.13 – 137) instead of 0.75 MWh.

This is illustrated in the diagram below; it can be seen that the imbalance volume is greater without ABSVD applied. This diagram, and the example set out above, shows the situation when an instructed volume of Frequency Response is correctly delivered (i.e. there is no over- or under delivery of Frequency Response) in addition to the volume of energy the Party is already contracted to deliver.



Assigning ABSVD and including it in Settlement calculations removes Balancing Service volumes (such as Mandatory Frequency response) from the BSC Settlement process. Such volumes are then settled outside the BSC, under CUSC governance.

## Appendix B: Glossary and Modification Group membership

Glossary	
Term/acronym	Meaning
ABSVD	Applicable Balancing Services Volume Data.
BSSG	Balancing Services Standing Group (a CUSC industry standing group).
BritNed	UK-Netherlands Interconnector.
IFA	UK-France Interconnector.
IA	Interconnector Administrator
IEA	Interconnector Error Administrator.
SAA	Settlement Administration Agent.
BMRA	Balancing Mechanism Reporting Agent.
CRA	Central Registration Agent.
FPN	Final Physical Notification.
MEL	Maximum Export Limit.
SEL	Stable Export Limit.
Implicit auction	Implicit auctions allow buyers and sellers in each country to bid for Interconnector capacity on a day ahead basis.
Explicit auctions	Explicit auctions allow customers to buy capacity for defined capacities, flow direction and time durations (this model is currently used for the IFA, Dutch-Belgian and Dutch-German interconnectors).

Modification Group membership				
Member	Organisation	25/05	02/06	01/07
Kathryn Coffin	ELEXON	✓	✓	✓
Dean Riddell	ELEXON	✓	✓	✓
Malcolm Arthur	Proposer/National Grid	✓	✓	✓
Man Kwong Liu	Accenture	✓	✓	✓
Rob Smith	BritNed	☎ (part)	X	✓
Bill Reed	RWE Supply & Trading GmbH	✓	✓	✓
Martin Mate	EDF Energy	✓	✓	X
Garth Graham	SSE	X	☎	X
Esther Sutton	E.ON	✓	✓	✓