

## Stage 03: Attachment A: Detailed Assessment for P277

### P277 'Allow Interconnector BM Units to choose their P/C Status'

What stage is this document in the process?

01 Initial Written Assessment

02 Definition Procedure

▶ 03 Assessment Procedure

04 Report Phase

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#### About this Document

This is Attachment A to the P277 Assessment Report. It provides additional details of the Workgroup's analysis and discussions.

# 1 Overview of Interconnectors

## How Interconnectors work

Interconnectors are connections between two different national Transmission Systems. Through these, Parties in one country can buy energy from (or sell energy to) a Party in another by transporting this energy across the relevant Interconnector. Interconnectors also allow national System Operators to trade between themselves in order to aid in balancing the energy on their respective Transmission Systems.

Currently, there are three Interconnectors linking the GB Transmission System to those in other countries:

- IFA, which connects to France;
- Moyle, which connects to Northern Ireland; and
- BritNed, which connects to the Netherlands.

Other Interconnectors have been proposed for the future, including a second connection to Ireland via the East West Interconnector, which is expected to become operational in late 2012.

Under the BSC, it is possible for multiple Parties to trade across an Interconnector simultaneously. For each Interconnector, a single BSC Party is responsible for registering the metering and Boundary Points under the BSC. Other Parties can sign up as Interconnector Users, and can bid to send or receive energy across the Interconnector. The Party designated as the Interconnector Administrator (IA) is responsible for submitting the Metered Volumes for each Interconnector User on to the Settlement Administration Agent (SAA) for use in Settlement.

For Interconnectors, it should be noted that 'Export' refers to electricity flowing onto the Transmission System (i.e. entering GB), while 'Import' refers to electricity flowing off the Transmission System (i.e. leaving GB).

## Energy Accounts and imbalance volumes

Each Trading Party is allocated two Energy Accounts; one for Production and one for Consumption. These are treated separately for Settlement calculations; any energy or contract volumes assigned to one Account will not influence the other in any way.

When a Party sets up an Energy Contract Volume Notification (ECVN), they need to specify which of their Energy Accounts this is to be made against.

Every BM Unit has a Production/Consumption (P/C) Status, which is used to determine which of these Energy Accounts that BM Unit's net Metered Volume is allocated to:

- A **Production** Status will result in Metered Volumes being allocated to the Production Energy Account; and
- A **Consumption** Status will result in Metered Volumes being allocated to the Consumption Energy Account.

Following the end of each Settlement Period, the net Metered Volumes (after being adjusted for transmission losses at the BM Unit level) in each Energy Account is compared to the net position of the ECVNs made against that Account. The difference between these is the imbalance volume. If this volume is positive, the Party is 'long' (Exports exceeding Imports), and they will be paid for this excess volume at System Sell Price (SSP). If this volume is negative, the Party is 'short' (Imports exceeding Exports), and they will be charged for this excess volume at System Buy Price (SBP).

Each of a Party's Energy Accounts is treated separately. If a Party's net Metered Volumes and ECVNs are not aligned to the same Account, the Party will be exposed to imbalance charges on both Accounts.

## Interconnector Users and Interconnector BM Units

Each BSC Party who wishes to trade across an Interconnector is required by the Interconnector Agreement for the relevant Interconnector to register as a BSC Trading Party in the role of an Interconnector User. The Interconnector Agreement that the Party enters into with the Interconnector operator of any Interconnectors that they wish to trade over lies outside of the BSC.

Under the current arrangements, each Interconnector User is allocated a pair of BM Units per Interconnector that they trade across. These pairs are comprised of:

- One BM Unit for the Party's Exports onto the GB Transmission System across the Interconnector (i.e. flows into GB), which is assigned a fixed P/C Status of Production; and
- One BM Unit for the Party's Imports from the GB Transmission System across the Interconnector (i.e. flows out of GB), which is assigned a fixed P/C Status of Consumption.

For Interconnector BM Units, this means that energy from a Production (exporting) BM Unit is assigned to the Lead Party's Production Energy Account, while energy from a Consumption (importing) BM Unit is assigned to their Consumption Energy Account. As an Interconnector BM Unit's P/C Status is fixed, this cannot be changed.

As an Interconnector can only physically flow in one direction at any time, only one of these two BM Units can have a non-zero Metered Volume associated with it in any given Settlement Period (i.e. either an Export in the Production BM Unit or an Import in the Consumption BM Unit).

Due to the set-up of Interconnector BM Units as described above, the Energy Account to which a Party's net Metered Volume for an Interconnector is allocated in each individual Settlement Period is determined by whether they are importing or exporting over that Interconnector in that Settlement Period. Parties would need to account for that when they submit any corresponding ECVNs.

Interconnector Users are required to submit Final Physical Notifications (FPNs) to National Grid before each Gate Closure, reflecting their expected Interconnector physical flows (Expected Transfer). In some cases, these may be submitted by the IA or Interconnector operator on behalf of all Interconnector Users when the Expected Transfer for the relevant Settlement Periods is agreed. The Interconnector Administrator will also receive the values of the Expected Transfer that will be used as the basis of each BM Unit Metered Volume (subject to provisions in BSC Section R7).

Interconnector Users would normally submit ECVNs that would reflect the sale or purchase of energy transferred across the Interconnector. In each case, they will need to ensure that all of their corresponding contracts in each Settlement Period are made against the same Energy Account that their Metered Volumes will be allocated to; if they do not then they may be exposed to imbalance.

An alternative method would be for a Party to submit a Metered Volume Reallocation Notification (MVRN) that would transfer all, or some, of the Metered Volume from a BM Unit to another BSC Party's Account. However, MVRNs can only be made between 'like' Accounts (i.e. from one Production Account to another or from one Consumption Account to another). In this case, the recipient Party would need to ensure any corresponding contracts are made against the correct Energy Account.

## Interconnector Administrators

Each Interconnector has an Interconnector Administrator (IA), who is responsible for allocating the Metered Volumes to the appropriate BM Units of the Interconnector Users. This is covered by BSC Section R7, and the process is documented in [BSCP04](#) 'BM Unit Metered Volumes for Interconnector Users'.

By Gate Closure for each Settlement Period, the IA will establish the Expected Transfer of each Interconnector User, which is usually done with reference to each User's FPNs. These values may subsequently change as a result of Bid Offer Acceptances<sup>1</sup> (which will affect only the Expected Transfer of the relevant Party) or due to any issues on the Interconnector itself such as curtailment (which will result in the Expected Transfer of all Parties being scaled accordingly).

Once the Settlement Period is complete, the IA will determine the final Expected Transfer for each Interconnector User, and will use that to determine the Metered Volume for each Interconnector BM Unit. These values will be passed on to the SAA for use in Settlement. Depending on circumstances, these volumes may not necessarily match the FPNs that were submitted by each Interconnector User.

## Interconnector Error Administrators

Each Interconnector also has an Interconnector Error Administrator (IEA), who is responsible for any shortfall or excess Metered Volume across that Interconnector. Like Interconnector Users, IEAs are registered with a pair of BM Units, one designated as Production and the other as Consumption. Currently, the IA and IEA of each active Interconnector are the same Party (although this is not a BSC requirement).

The IEA is responsible for any residual Metered Volumes that have not been allocated to an Interconnector User. These include:

- Any amendment made to the Interconnector's operating program post Gate Closure (except for instances given in BSC Section R7.1.3(b));
- 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 which are already allowed for in R7.1.3(b)); and
- Any other volume (e.g. implicit auctions) not allocated to an Interconnector User.

<sup>1</sup> The BSC allows for Bid-Offer Acceptances on Interconnector BM Units; however, the cross-border commercial arrangements to support them are not currently in place.

For each Settlement Period, the Metered Volumes of all the Interconnector Users, as determined by the IA, are summed. This net volume is compared by the SAA to the actual Meter reading for the Interconnector. The difference between these two results is allocated to one or other of the IEA's BM Units, depending on whether it is positive (Production BM Unit/Energy Account) or negative (Consumption BM Unit/Energy Account). This residual volume is referred to as the 'error volume'. The IEA will be responsible for ensuring this volume is balanced, and will be paid SSP/charged SBP as appropriate for any imbalance.

## System Operators

It is possible for National Grid, as the System Operator, to request that energy is flowed across an Interconnector. This is usually in order to balance either the GB Transmission System or the External System on the other side of the Interconnector. The requirements for this are covered in BSC Section R7.5.

For this purpose, National Grid is assigned a pair of Interconnector BM Units per Interconnector (Production and Consumption), and the flows related to such System Operator to System Operator (SO-SO) trades are allocated to these BM Units (positive Exports to National Grid's Production BM Unit/Account and negative Imports to National Grid's Consumption BM Unit/Account). National Grid is required to notify the relevant IA when such a flow occurs, and the net flow is factored into the Metered Volume calculations along with all the other trades.

### Worked examples – Generator exporting over an Interconnector

A Party owns a generation site in Great Britain. However, they wish to sell the energy generated here in Northern Ireland. To do this, they need to trade the energy they generate over the Moyle Interconnector.<sup>2</sup>

#### Current BSC arrangements

The Party generates 100MW in a Settlement Period. This is allocated to the generation site's BM Unit, which has a Production P/C Status and is part of a 'delivering' (exporting) Trading Unit during that Settlement Period. In this Settlement Period, the 'delivering' Transmission Loss Multiplier (TLM) is 0.99, and so their BM Unit Metered Volume is scaled down to +99MW.<sup>3</sup> This is allocated to their Production Energy Account.

The Party elects to trade the 100MW out of Britain across Moyle. This is allocated to their Consumption Interconnector BM Unit for Moyle, which is an 'offtaking' (importing) Sole Trading Unit. In this Settlement Period, the 'offtaking' TLM is 1.01, and so their BM Unit Metered Volume is scaled up to -101MW. This is allocated to their Consumption Energy Account.



The Party's resultant position is:

- +99MW imbalance in their Production Account – the Party will be paid for this at System Sell Price (SSP).
- -101MW imbalance in their Consumption Account – the Party will be charged for this at System Buy Price (SBP).

As SBP is always greater than or equal to SSP, the Party will generally end up paying more for the shortfall in their Consumption Account than they are paid for the excess energy in their Production Account.

In order to better balance their position, the Party elects to trade 99MW from their Production Account to their Consumption Account through an ECVN:

- The -99MW traded out of their Production Account will balance the +99MW of Credited Energy from the generation site, and leave their Production Account with zero imbalance.

<sup>2</sup> In order to trade across an Interconnector, a Party is first required to either buy capacity in an explicit auction or buy capacity and energy in an implicit auction.

<sup>3</sup> See the separate P278 Assessment Report for a more detailed explanation of how the BSC adjusts Metered Volumes to account for transmission losses.

- The +99MW traded into their Consumption Account will net with the -101MW of Credited Energy from the Interconnector, and leave a net -2MW imbalance in their Consumption Account – they will be charged for this at System Buy Price.

### Proposed P277 arrangements

The Party generates 100MW in a Settlement Period. This is allocated to the generation site's BM Unit, which has a Production P/C Status and is part of a 'delivering' (exporting) Trading Unit during that Settlement Period. In this Settlement Period, the 'delivering' TLM is 0.99, and so their BM Unit Metered Volume is scaled down to +99MW. This is allocated to their Production Energy Account.

The Party elects to trade the 100MW out of Britain across Moyle. This is allocated to their one Interconnector BM Unit for Moyle, for which the Party has elected a Production Flag. In this Settlement Period, the offtaking TLM is 1.01, and so their BM Unit Metered Volume is scaled up to -101MW. This is allocated to their Production Energy Account.



Both of these volumes are allocated to the Party's Production Energy Account. They automatically net to give an overall imbalance of -2MW in the Production Account, for which the Party is charged at System Buy Price. No energy is allocated to their Consumption Account, which remains empty in this scenario.

### Transmission losses and P278

In reality, the TLMs are not calculated until after the Settlement Period. This means that the exact volume of energy from each BM Unit will not be known when the Party sets up their ECVN, which must be done before Gate Closure.

This means that in the 'current arrangements' example, the Party's ECVN will not exactly match the volume of energy allocated to their Production Account, and so a small residual volume will be left. The Party will be paid or charged for this depending on whether this imbalance is positive or negative.

If separate Modification P278 'Treatment of Transmission Losses for Interconnector Users' is approved, the TLM for Interconnector BM Units will be fixed at 1. This means that any Metered Volumes the Party receives from Interconnector BM Units will not be adjusted for transmission losses. See the separate P278 Assessment Report for more details.

## Other Scenarios

The principles of the above worked example can be equally applied to the following scenarios:

- A Party wishing to transport energy from France to Northern Ireland via Great Britain – the energy entering GB over the IFA Interconnector would be allocated to the Production Account and the energy leaving GB over the Moyle Interconnector would be allocated to the Consumption Account.
- A Party importing energy from France to supply customers in Britain – the energy being traded across the IFA Interconnector would be allocated to the Production Account and the energy being supplied within Britain would be allocated to the Consumption Account.

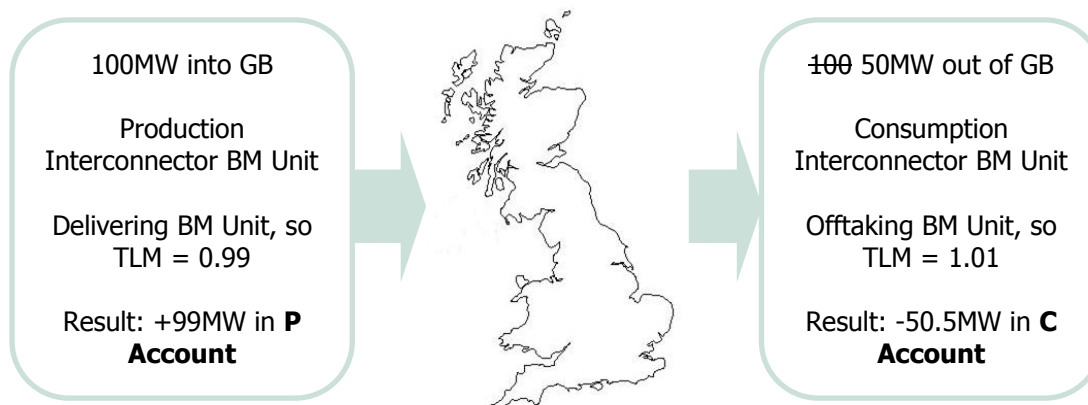
In each case, under the current arrangements, the volumes would be allocated to different Energy Accounts. Under P277, the Party could elect their P/C Flag for the Interconnector BM Unit(s) such that both volumes would automatically end up in the same Energy Account (either Production or Consumption according to the elected P/C Flag).

## Curtailment over an Interconnector

If there is curtailment over an Interconnector, for example due to technical issues with the Interconnector, then the Metered Volumes of all Interconnector Users are scaled down accordingly. For Settlement purposes, this is treated no differently to if a generator went on sudden outage. The Lead Parties of the relevant Interconnector BM Units will receive less Credited Energy Volume into their Energy Account as a result, which will likely leave them in imbalance. Note that curtailment will only impact capacity that has been brought through an explicit auction.

A Party has brought 100MW of energy in France and wishes to sell it in Northern Ireland. They will need to trade the energy into GB over the IFA Interconnector, before trading it out again over the Moyle Interconnector. Using the current arrangements, in this hypothetical example we apply the scenario where the Moyle Interconnector suffers a 50% curtailment in the Settlement Period. The Party is still bringing 100MW into GB over the IFA Interconnector, but the 100MW it has elected to trade out again across the Moyle Interconnector is scaled down to just 50MW.

This gives the following situation under the current BSC arrangements:



The Party's resultant position is:

- +99MW imbalance in their Production Account.
- -50.5MW imbalance in their Consumption Account.

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The Party has set up an ECVN to trade 99MW from their Production Account to their Consumption Account:

- The -99MW traded out of their Production Account will balance the +99MW of Credited Energy from the IFA Interconnector, and leave their Production Account with zero imbalance.
- The +99MW traded into their Consumption Account will net with the -50.5MW of Credited Energy from the Moyle Interconnector, and leave a net +48.5MW imbalance in their Consumption Account – they will be paid for this at SSP.

Under the P277 arrangements, the Party will still end up with a resultant imbalance of +48.5MW – it will just be that the +99MW and the -50.5MW are initially assigned to the same Energy Account and will therefore automatically net without needing an ECVN.

If the 50% curtailment had been on the IFA Interconnector and not the Moyle Interconnector, the Party would end up with an overall imbalance of -51.5MW (under either arrangement), which they would be charged for at SBP.

### 3 P277 impact on BSCCo Charges

As of 6 December 2011, there were 148 Interconnector BM Units (i.e. 74 pairs of Interconnector BM Units) registered in CRA systems.

P277 will halve the number of registered Interconnector BM Units.

There are two main BSCCo Charges relevant to P277 (see BSC Section D, Annex D-3):

- The CVA BM Unit Monthly Charge, which is currently £100 per BM Unit per month; and
- The Notified Volume Charge, which is currently £0.0007 per MWh traded.

If P277 halves the number of Interconnector BM Units to 74, then ELEXON will receive £7.4k less in CVA BM Unit Monthly Charges each month. This difference will be picked up by all other BSC Parties in their BSCCo Charges proportionate to their market share.

Assuming P277 also results in 74 fewer ECVNs being submitted than currently, then there will also be a reduction in the amount ELEXON receives in Notified Volume Charges. The exact reduction in charges will depend on volumes traded. Again, this difference will be picked up by all other BSC Parties in their BSCCo Charges proportionate to their market share.



### Detailed Solution Requirements

For the full detailed solution requirements, please refer to the P277 Draft Solution to Identify Impacts document which was issued for industry impact assessment and which is available on the [P277](#) page of the ELEXON website.

### Operational requirements

This section summarises the operational solution requirements for P277. You can find the full draft redlined changes to the BSC, BSCP15, BSCP31, BSCP65 and the CRA Service Description in Attachments C-G.

Note that the P277 solution is mandatory. It will therefore affect both existing and future Interconnector Users, Interconnector Administrators and Interconnector Error Administrators as explained further below. For a description of the reasons why the Workgroup believes the solution should be mandatory, please refer to the main P277 Assessment Report.

The P277 solution does not impact any reporting flows. For example, the CRA-I014 will still report the BM Unit's P/C Flag and P/C Status in the same way as currently.

The P277 rules under which Interconnector BM Units must elect their P/C Flag have been designed to be consistent (as far as possible/practical) with those which Approved Modification P268<sup>4</sup> introduced for Exempt Export BM Units on 23 February 2012.

#### Requirement 1

##### **Existing Interconnector Users and Interconnector Error Administrators shall only have one Interconnector BM Unit per Interconnector**

All existing Interconnector Users and Interconnector Error Administrators (IEAs) will need to deregister their existing pairs of Interconnector BM Units per Interconnector and register a single Interconnector BM Unit per Interconnector in their place. This one-off implementation exercise will need to be undertaken using the timescales and processes set out in BSCP15. All the BM Unit pairs will have an Effective To Date of the day before the P277 Implementation Date, while all the new single BM Units will have an Effective From Date of the P277 Implementation Date. Any Party that does not re-register their BM Units will have their existing BM Units deregistered automatically by the Central Registration Agent (CRA), and will not be able to trade across the Interconnector until they register the new single BM Unit.

#### Requirement 2

##### **Existing Interconnector Users and Interconnector Error Administrators shall elect the P/C Flag of their replacement Interconnector BM Unit(s)**

All existing Interconnector Users and IEAs will need to elect the P/C Flag of their single Interconnector BM Units at the time of re-registration, and this will be effective from the P277 Implementation Date. This election will be either Production or Consumption, and will not change unless the Lead Party re-elects the Flag or deregisters the BM Unit. If the Lead Party does not elect their P/C Flag, then their new BM Unit will not be registered until they do.

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<sup>4</sup> 'Clarify the P/C status process for exempt BM Units'.

### Requirement 3

#### **New Interconnector BM Unit registrations will be for one BM Unit per Interconnector**

All Interconnector BM Units registered on or after the P277 Implementation Date will be for a single Interconnector BM Unit per relevant Interconnector. Applications for a pair of BM Units will be rejected by the CRA. All other elements of the existing registration process will be unchanged, apart from the requirements to have one BM Unit per Party per Interconnector and to elect its P/C Flag.

### Requirement 4

#### **The P/C Flag for new Interconnector BM Units must be elected at the time of registration**

The Lead Party for any Interconnector BM Units registered on or after the P277 Implementation Date will be required to elect the Interconnector BM Unit's P/C Flag at the time of registration. If this election is not made via the BM Unit registration form, the BM Unit registration request will be rejected by the CRA. The Interconnector BM Unit's elected P/C Flag must be either Production or Consumption, and its P/C Status will not change unless the Lead Party re-elects the P/C Flag or deregisters the BM Unit.

### Requirement 5

#### **The Lead Party of an Interconnector BM Unit can re-elect its P/C Flag at any time**

The Lead Party of an Interconnector BM Unit will be able to re-elect its P/C Flag at any time. This will be effective no earlier than 2 Working Days from the time of request (unless otherwise agreed with the CRA), and will supersede their previous election. This election must be either Production or Consumption, and the BM Unit's P/C Status will not change unless the Lead Party re-elects the Flag or deregisters the BM Unit.

### Requirement 6

#### **Interconnector Administrators will need to allocate the correct metered volumes to the correct Interconnector BM Units**

Interconnector Administrators will be required to allocate the Metered Volume of each Party who traded across the Interconnector in a Settlement Period to their single Interconnector BM Unit for that Interconnector, regardless of whether the volume is an Import (negative flow) or an Export (positive flow) in that Settlement Period. This will be done on a Settlement Day basis (i.e. this requirement will only apply for Settlement Days on or after the P277 Implementation Date).

### Requirement 7

#### **The SAA will need to allocate the correct error volumes to the correct Interconnector Error Administrator BM Units**

The Settlement Administration Agent (SAA) will be required to allocate the remaining Metered Volume (the 'error volume') on each Interconnector in a Settlement Period to the single Interconnector BM Unit of the IEA for that Interconnector, regardless of whether the volume is an Import or an Export. This will be done on a Settlement Day basis (i.e. this requirement will only apply for Settlement Days on or after the P277 Implementation Date).

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## Why should the Interconnector BM Units be deregistered and re-registered?

The proposed approach to implementing the P277 solution is to deregister the existing pairs of Interconnector BM Units and register the new single Interconnector BM Units in their place, rather than simply deregistering one of the existing pair.

This approach has been adopted for the following reasons:

- **Elect the initial P/C Flag:** As part of the solution, each Interconnector BM Unit will need to elect their P/C Flag for the single BM Units, to be effective from the P277 Implementation Date. If the Lead Party simply deregistered one of their existing BM Units, they would still need to explicitly elect the P/C Flag for the other.
- **Declare the GC/DC values:** Under the current arrangements, the Production Interconnector BM Unit has a fixed Demand Capacity (DC) value of zero, while the Consumption Interconnector BM Unit has a fixed Generation Capacity (GC) of zero. Under P277, this will no longer be the case and the single Interconnector BM Unit's GC and DC values will need to be declared/determined in the same way as for other BM Units. If the Lead Party deregistered one of their existing BM Units, they would therefore still need to re-declare the GC/DC values of the other BM Unit.
- **Declare the MEL/MIL values:** In the same way as with GC/DC, under the current arrangements, the Production Interconnector BM Unit has a fixed Maximum Import Limit (MIL) value of zero, while the Consumption Interconnector BM Unit has a fixed Maximum Export Limit (MEL) of zero. Under P277, this will no longer be the case and the single Interconnector BM Unit's MEL and MIL values will need to be declared/determined in the same way as for other BM Units.
- **Submit Physical Notifications:** Each Party will have submitted Physical Notifications (PNs) based on whether they were importing or exporting over an Interconnector. If they were bringing energy into GB, they would have submitted a non-zero PN for their Production BM Unit and a PN of zero for their Consumption BM Unit; the reverse is true if they were taking energy out of GB. Under P277, all PNs would be made against the single BM Unit. If the Lead Party deregistered one of their existing BM Units, they would still need to resubmit that BM Unit's PNs against the other BM Unit.
- **Switch to a new BM Unit ID convention:** Currently, the BM Unit IDs for Interconnector BM Units contain an identifier as to whether it is the Production BM Unit or the Consumption BM Unit. If a Lead Party deregistered one of their existing BM Units, the remaining one would still have this identifier in it. This would result in inconsistent IDs depending on who deregisters which BM Unit. In addition, this existing convention would not make sense for new Interconnector BM Units registered after the P277 Implementation Date, as the Lead Party could elect to change the BM Unit's P/C Status from Production to Consumption, or vice versa, at any time. It would therefore be clearer to switch to a new uniform system for all Interconnector BM Unit IDs, which will mean needing to reregister all the existing BM Units.

In order to facilitate the above, it would be easier to register a new BM Unit in place of the existing pair rather than try to amend one of the existing BM Units to meet the required criteria. By taking this approach, each Interconnector User will be required to supply the relevant details as part of the registration process for their new single BM Units if they want these BM Units to be active from the P277 Implementation Date.

For example, it will be a mandatory step in the Interconnector BM Unit registration (and re-registration) process under P277 for the Lead Party to explicitly elect the Interconnector BM Unit's P/C Status. This removes the risks that:

- The Interconnector User simply deregisters one of its existing BM Unit pair without explicitly confirming whether or not it wishes to keep the other BM Unit's existing P/C Status; or
- The Interconnector User does not initiate the deregistration process in time for the P277 Implementation Date, leaving the CRA in the position of having to decide which of the existing pair to deregister by default.

It therefore avoids the need for any default P/C Status rule (e.g. that the remaining BM Unit retains its existing P/C Status in the absence of an explicit election to the contrary by the Lead Party). Approved Modification Proposal [P268](#)<sup>5</sup> has previously highlighted the potential risk of misunderstanding and unintended imbalance which could arise from such default rules. The P277 solution requirements regarding the election of Interconnector BM Units' P/C Status have therefore been modelled closely on the P268 solution.

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<sup>5</sup> 'Clarify the P/C status process for exempt BM Units'. P268 was implemented on 23 February 2012.

### Implementation approach for P277

When a BSC Modification is implemented, it will generally be done so on a 'Settlement Date'<sup>6</sup> – i.e. Settlement Days before the Implementation Date will continue to use the old rules for all their Settlement Runs while Settlement Days on or after the Implementation Date will use the new rules for all their Settlement Runs. By implementing changes in this way, it is clear which set of rules apply to any given Settlement Period, and these rules would apply irrespective of when any actual Settlement calculations for that Settlement Period take place. Therefore, the risk of any retrospective changes to Settlement calculations or Trading Charges in subsequent Settlement Runs as a result of changes to the rules is avoided.

This approach means that P277 (if approved) would come into effect at 00:00 London time<sup>7</sup> on the approved P277 Implementation Date, at which point the rules for the settlement of Interconnector flows would change:

- Interconnector volumes for Settlement Days before the P277 Implementation Date will need to be allocated to the Party's Production or Consumption Account depending on the direction of flow (i.e. the pre-P277 rules); and
- Interconnector volumes for Settlement Days on or after the P277 Implementation Date will need to be allocated to the Party's Production or Consumption Account depending on the P/C Flag they have chosen for their Interconnector BM Unit (i.e. the P277 rules).

These rules will apply in this way regardless of whether the allocation is *ex ante* (Physical Notifications) or *ex post* (Deemed Meter Volumes).

To support these change in the rules, all of the existing pairs of Interconnector BM Units will be de-registered with effect from the P277 Implementation Date, and new single BM Units will be registered in their place.

The P277 impact assessment revealed some concerns from Interconnector Administrators (IAs) about how they will cut over from old to new BM Unit Identifiers. The data flows potentially affected by this issue are:

- The Physical Notification (PN) data sent from IAs to the System Operator. This is a Grid Code rather than a BSC data flow, but potentially impacts the BSC as the System Operator forwards the Final Physical Notifications to BMRA and SAA following Gate Closure; and
- The SAA-I006 ('BM Unit Metered Volumes for Interconnector Users') sent from IAs to the SAA.

In addition, these issues are further complicated by differences in time zones, as processes on the IFA and BritNed Interconnectors are run to Central European Time (CET), which is one hour ahead of London time.

The workarounds proposed below should not affect Parties.

<sup>6</sup> This is opposed to a 'Calendar Day' implementation, in which calculations are performed in accordance with the version of the BSC that is applicable on the Calendar Day on which the calculation is performed. Settlement Day implementation is the preferred approach as it avoids the risk of any retrospective changes to Settlement calculations or Trading Charges.

<sup>7</sup> The BSC defines a Settlement Day as "the period from 00:00 hours to 24:00 hours on each day", and BSC X2.3.3 states that "references to times of day in the Code are to London time".

## Workaround for Physical Notifications

IAs submit PNs to the System Operator on behalf of all the Interconnector Users on the relevant Interconnector. Different IAs may have different timetables for submitting, but generally IAs will submit PN data for day D multiple times throughout days D-1 (the day before the P277 Implementation Date) and D (the P277 Implementation Date).

In the context of P277 implementation, this means that, on day D-1, the IA will be sending:

- Intraday submissions for day D-1, using the old BM Unit IDs; and
- Day-ahead submissions for day D, using the new BM Unit IDs.

In addition, for the IFA and BritNed Interconnectors (who work to CET) each submission will relate to the day ending 00:00 CET (23:00 London time). Because of the difference between London time and CET, the day-ahead submissions for day D will contain data for the last hour of Settlement Day D-1 (with the old BM Units) and the first 23 hours of Settlement Day D (with the new BM Units). For the Moyle Interconnector and the forthcoming East-West Interconnector (which work to London time) their submissions will relate to the day ending 00:00 London time, and so they would not have an issue with having both old and new BM Units in a single submission.

It will be on day D-1 that problems with PN data may arise. Submissions on this day will relate both to Settlement Day D-1 (when the old BM Unit registrations are in effect), and Settlement Day D (when the new BM Unit registrations are in effect). As these submissions are made throughout the day, there is no point at which the IA can cut over from the old BM Units to the new BM Units.

A workaround will be put in place for this one day, in order to allow both the old and the new BM Unit IDs to be used on day D-1. This will be used for any IAs whose systems would be unable to use the old BM Unit IDs for data relating to Settlement Day D-1 while simultaneously using the new BM Unit IDs for data relating to Settlement Day D.

Under this workaround, IAs will be allowed to use the new BM Unit IDs for all PN submissions from day D-1 onwards. The System Operator and the BMRA will therefore need to be able to accept PN data that relates to Settlement Day D-1, but using the new BM Unit IDs. This should have no material impact on Settlement or on Trading Charges, as PNs are only used for reporting purposes and in the credit calculations.<sup>8</sup>

This workaround will require BSC Agents to register the new Interconnector BM Units with effect from day D-1, in order to allow Central Systems to receive the PNs. This means that, for this one day, both the old and the new BM Units will be effective, as the old BM Units would not be deregistered until the end of day D-1. BSC Agents would need to ensure that any data received for the new BM Units does not enter the Settlement Run for Settlement Day D-1.

IAs have also suggested that intra-day trading for days D-1 and D could be cancelled, in order to reduce complexity. A decision around whether this option should be used will be taken nearer the time, and falls outside the BSC.

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<sup>8</sup> For the credit calculations, it does not matter which Energy Account PNs are allocated to, as these calculations are performed at the Party level, where the Party's net overall contracted position is compared with their estimated net metered volumes.

## Workaround for SAA-I006 files

The SAA-I006 ('BM Unit Metered Volumes for Interconnector Users') holds Interconnector Deemed Metered Volume (IDMV) data for each Interconnector BM Unit. This file relates to a single Settlement Day – i.e. 00:00–00:00 London time, which is 01:00-01:00 CET. BSCP04 requires IAs to submit this file to the SAA by the end of the following Working Day, although in practice some IAs may not meet this requirement due to time zone differences (e.g. BritNed systems run on CET days, and therefore they cannot produce an IDMV file for day D until they have finished processing for CET day D+1, which will happen in the early hours of day D+2).

In the context of the P277 implementation, the SAA will be expecting to receive the following files:

- A file for Settlement Date D-1, which will contain the old BM Unit IDs; and
- A file for Settlement Date D, which will contain the new BM Unit IDs.

There is no way around this requirement; if the IA uses the incorrect BM Unit IDs, they will place the relevant Interconnector Users into imbalance.

Unless the IA is able to amend their systems to implement the changes on a Settlement Day basis, they will need to manually post-process the files for the affected Settlement Days, updating the BM Unit IDs as appropriate (ensuring that the correct old BM Unit is used depending on whether the volume is positive or negative). This could be done manually, given that this workaround will only ever need to be done twice, or a simple automated script could be produced.

Any errors in these files will be picked up by BSC Agents at the Interim Information (II) Settlement Run, and corrected in time for the Initial Settlement (SF) Settlement Run.



## 6 Assessment Procedure Consultation Responses

### Summary of responses

The table below summarises the responses received to the Assessment Procedure Consultation. You can find the full set of responses in Attachment B.

Summary of P277 Assessment Procedure Consultation Responses				
Question	Yes	No	Neutral/ No Comment	Other
Do you agree with the Workgroup's initial majority view that P277 would not better facilitate the Applicable BSC Objectives when compared with the current BSC rules?	8	6	0	0
Do you agree with the Workgroup's majority view that P277 would give rise to undue discrimination?	8	6	0	0
Do you agree with the Workgroup that there is no Alternative Modification within the scope of P277 which would better facilitate the Applicable BSC Objectives than the Proposer's solution?	13	0	1	0
Do you agree with the Workgroup that the draft legal text delivers the intent of P277?	8	0	5	1
Do you agree with the Workgroup that, if approved, the P277 solution should be mandatory?	13	1	0	0
Do you agree with the Workgroup's recommended Implementation Date?	13	0	1	0
Do you have any further comments on P277?	5	9	0	0

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## Workgroup's Terms of Reference

Specific areas set by the BSC Panel in the P277 Terms of Reference

What changes are needed to BSC documents, systems and processes to support P277 (including any impact on Interconnector Administrators and Interconnector Users), and what are the related costs and lead times?

What actions can Interconnector Users currently take to mitigate the P277 issue? Are these robust/efficient/appropriate?

How should Interconnector volumes be treated? Are the original principles behind the existing BSC rules still appropriate? (This may involve considering the wider European context.)

Should any new P277 arrangements be mandatory or voluntary? What would be the practicalities of any voluntary arrangements?

What are the benefits to the Applicable BSC Objectives? Are there any wider benefits or principles that Ofgem should consider?

Would treating Interconnector Users differently to other Parties be due or undue discrimination?

If P277's intention is that Interconnector Users can net Import and Export Interconnector flows in a single Energy Account to avoid Imbalance Charges, how would this interact with:

- Scaling Interconnector BM Unit Metered Volumes for transmission losses (i.e. would equal and opposite flows actually net to zero)?
- Curtailment of one Interconnector, in a scenario where a Party is Importing energy into GB over one Interconnector and Exporting it out of GB over another?
- Wider charges and 'embedded benefits'?

The Workgroup's Assessment Report should include an explanation of how Interconnectors work, including the roles of the Interconnector Administrator and Interconnector Error Administrator.

## Assessment Procedure timetable

P277 Assessment Timetable

Activity	Date
Panel submits P277 to Assessment Procedure	13 Oct 11
Workgroup Meeting 1	26 Oct 11
15WD Impact Assessment undertaken	14 Nov 11 – 05 Dec 11
Workgroup Meeting 2 (Joint with P278)	08 Dec 11
15WD Industry Consultation undertaken	13 Jan 12 – 03 Feb 12
Workgroup Meeting 3 (Joint with P278)	14 Feb 12
Panel considers Workgroup's Assessment Report	08 Mar 12

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## Workgroup membership and attendance

P277 Workgroup attendance				
Name	Organisation	Meeting 1 26/10/11	Meeting 2 08/12/11	Meeting 3 14/02/12
Members				
Kathryn Coffin	ELEXON (Chair)	✓	✓	✓
David Kemp	ELEXON (Lead Analyst)	✓	✓	✓
Simon Peiner	Vattenfall (Proposer)	✓	✓	✓
Gary Henderson	IBM for Scottish Power	✓	✓	✓
Esther Sutton	E.ON	✗	✓	✓
Martin Mate	EDF	✓	✓	✓
Mark Thomas	RWE Supply & Trading	✓	✓	✓
Kris Kennedy	SONI	✓	✗	✓
Iain Pielage	National Grid Electricity Transmission plc	✓	✓	✓
Vince Hammond	National Grid Interconnectors Limited	✗	✓	☎
Attendees				
John Lucas	ELEXON (Design Authority)	✓	✓	☎ (part)
Kim Pöhlmann	Vattenfall (Proposer's Alternate)	✓	✗	✗
Andy Colley	SSE	☎	✗	✓
Charlotte Ramsey	Ofgem	✓	✗	✗
Matthew Grant	Ofgem	✗	✓	✓
Evridiki Kaliakatsou	Ofgem	✗	✗	✓
Alan Brady	SONI	✗	☎	✗

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