Overview of Trading Units

Introduction

This document provides a high level explanation for the creation, use and application of Trading Units under the Balancing and Settlement Code (BSC). Further information is available from Sections D, K and T of the BSC. The BSC and a summary of it are available on the ELEXON website – **www.elexon.co.uk**.

What is a Trading Unit?

A Trading Unit is an entity used in BSC Settlement processes which comprises one or more Balancing Mechanism (BM) Units. A Trading Unit enables net trading for all BM Units within it and enables the following processes to be carried out:

- The application of the relevant Transmission Loss Multiplier to a BM Unit;
- The application of the relevant Production or Consumption flag to a BM Unit;
- The allocation of some BSC Costs;
- The allocation of Residual Cashflow Reallocation Cashflow (RCRC); and
- The allocation (by the Transmission Company) of Balancing Services Use of System (BSUoS) charges.

The default Trading Unit configuration is a single BM Unit defined in the BSC as a Sole Trading Unit. However, a BSC Party can submit an application to aggregate a number of BM Units into a Trading Unit. The application must be approved by the BSC Panel, except in the case of the creation of the Base Trading Unit for a Grid Supply Point (GSP) Group. Annex K-2 of the BSC contains the criteria for a group of BM Units to belong to a single Trading Unit.

The BSC supports six classes of Trading Unit:

- Class 1 – covering generation, Unit Transformers and Station Transformers located within the same power station;
- Class 2 – covering generation and demand connected by dedicated assets;
- Class 3 – covering generation and demand connected by contiguous assets;
- Class 4 – covering Exempt Export BM Units in the same GSP Group
- Class 5 – covering Interconnector BM Units; and
- Class 6 – covering sites with generation and demand which demonstrate sufficient similarities with sites which would satisfy the conditions applied to Classes 1 to 5 Trading Units, such that it would be unreasonable not to treat the nominated BM Unit(s) as a Trading Unit.

BSC Trading Parties apply for Trading Unit treatment, using the processes in Balancing and Settlement Code Procedure (BSCP)31 – 'Registration of Trading Units'. One of the above criteria must be identified for the BSC Panel[1] to grant Trading Unit treatment to two or more BM Units. The BM Units in a Trading Unit don't need to belong to the same Trading Party, but all of the Lead Parties of the BM Units must be party to the application.

[1] The Imbalance Settlement Group (ISG) a Committee of the BSC Panel has delegated authority to approve Class 1,2,3 and 5 Trading Units and ELEXON has delegated authority to approve Class 4.

In addition to the Trading Unit Classes above, Section K 4.7 of the BSC also details the establishment of 'Base Trading Units' for each GSP Group. The Base Trading Units consist of all Supplier BM Units within a GSP Group and by default all Exempt Export BM Units within the same GSP Group. Lead Parties of Exempt Export BM Units can elect to withdraw from the Base Trading Unit into either a Class 4 or Sole Trading Units through the process in BSCP31.

The benefits of Trading Unit treatment will go to one or more Lead Parties or Subsidiary Parties, as described below, and it is for the Parties to agree how the benefits are shared.

Treatment of Sole Trading Units

BM Units are treated differently depending on whether they are Production or Consumption and whether, during a particular Settlement Period, they Export onto, or Import from the system. In particular, for Sole Trading Units i.e. BM Units that are not part of a Trading Unit with other BM Units:

- Credited Energy Volumes (QCE) for Production BM Units accrue to Production Energy Accounts and the Credited Energy Volumes for Consumption BM Units accrue to Consumption Accounts;
- Different Transmission Loss Multipliers (TLMs) are applied to Exporting and Importing BM Units, such that the output from Exporting BM Units is scaled down (typically by around 0.7%) and the demand of Importing BM Units is scaled up (typically in the region of 0.8%);
- Residual Cashflow Reallocation Cashflows (RCRC) are based on the magnitude of the Credited Energy Volume of each BM Unit, i.e. the Credited Energy Volume of an Exporting BM Unit, or the Credited Energy Volume of an Importing BM Unit multiplied (because it is a negative quantity[2]) by minus one;
- A significant element of BSC Costs is charged out proportionately on the Credited Energy Volumes of Exporting BM Units and on the Credited Energy Volumes of off-taking BM Units times minus one

Consequently, for two BM Units associated with the same site, one a Production BM Unit Exporting to the system and the other a Consumption BM Unit Importing from the system, but which are not in a single Trading Unit, the Lead Party or Lead Parties for the BM Units would be:

(a) exposed to imbalance charges on the relevant Production and Consumption Accounts;

(b) responsible for transmission losses in respect of each BM Unit, through the scaling up of energy Imported and scaling down of energy Exported; and

(c) charged BSC Costs on the energy Exported and the energy Imported by each of the two BM Units.

Net Treatment of Multiple BM Units within a Trading Unit

The aggregation of a number of BM Units into a single Trading Unit enables net trading for all BM Units within the Trading Unit.

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2 In the BSC, energy put on the System is positive. Energy taken off the system is negative.

Each BM Unit has a Relevant Capacity. If a BM Unit's Generation Capacity (GC) is larger than the magnitude[3] of the Demand Capacity (DC), the Relevant Capacity is the Generation Capacity, and the BM Unit is classed as Production. If the magnitude of the Demand Capacity is larger than the Generation Capacity, the Relevant Capacity is the Demand Capacity, and the BM Unit is classed as Consumption. For a Trading Unit consisting of two or more BM Units, the sum of the Relevant Capacities for all the BM Units, irrespective of whether on their own they would have been Production or Consumption, are then classed as Production or Consumption depending on whether the sum of the Relevant Capacities is greater or less than zero.

As a result of the above treatment of BM Units, the output of a BM Unit that predominately Imports, but which is in a Trading Unit whose BM Units overall Export, will accrue to the Production (rather than Consumption) Energy Account of the BM Unit's Lead Party for every Settlement Period. Consequently the (typically negative) metered quantities of the BM Unit end up being netted-off against the (typically positive) quantities in the Lead Parties' Production Energy Account, and only the net imbalance of the Production Energy Account will be exposed to Energy Imbalance prices. The Credited Energy Volume of this BM Unit can be allocated using a Metered Volume Reallocation Notification (MVRN) to the Production Energy Account of any other Trading Party (these Parties being known as Subsidiary Parties) so only the net imbalance of the Production Energy Account of the Subsidiary Party will be exposed to Energy Imbalance prices.

In addition, if, in any given Settlement Period, a BM Unit is Importing when all the BM Units in the Trading Unit are in aggregate Exporting – this is described in the BSC as a "Delivering Trading Unit", then:

- by applying the Transmission Loss Multiplier treatment for Exporting BM Units to all of the BM Units in the Trading Unit, the demand of the Importing BM Unit will be scaled down rather than up (the Credited Energy Volume); and
- the Credited Energy Volumes of the Importing BM Unit count negatively in the allocation of BSCCo changes, so that the Lead Party and any Subsidiary Parties to a MVRN associated with the BM Unit will get paid, rather than pay, an amount for the BM Unit in respect of BSC Costs.

Conversely, if, in any given Settlement Period, a BM Unit is Exporting when all the BM Units in the Trading Unit are in aggregate, Importing – this is described in the BSC as an "Offtaking Trading Unit", then:

- by applying the Transmission Loss Multiplier treatment for Importing BM Units to all of the BM Units in the Trading Unit, the demand of the Exporting BM Unit will be scaled up rather than down (the Credited Energy Volume); and
- the Credited Energy Volumes of the Exporting BM Unit count negatively in the allocation of BSCCo changes, so that the Lead Party and any Subsidiary Parties to a MVRN associated with the BM Unit will get paid, rather than pay, an amount for the BM Unit in respect of BSCCo changes.

Residual Cashflow Reallocation Cashflow (RCRC) is a payment to Trading Parties arising as a consequence of imbalance charges paid by Trading Parties. A consequence of netting the exposure of the BM Units within a Trading Unit to imbalance charges, is the netting of RCRC payments. This means that for a BM Unit which is Importing in a Delivering Trading Unit or a BM Unit that is Exporting in an Offtaking Trading Unit, the Credited Energy Volume associated with the BM Unit is counted negatively in the allocation of RCRC. Typically the Lead Party and any Subsidiary Parties will pay, rather than be paid, RCRC.

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3 The sign convention implies that the Generation Capacities are positive numbers, whereas Demand Capacities are negative numbers. Thus the test that is actually applied is whether the sum of the Generation Capacity and the Demand Capacity is greater or less than zero.

Use of System Charging

Other benefits of Trading Units include adjustments to National Grid charges for the use of its system, as described in National Grid's Statement of the Use of System Charging Methodology, published with National Grid's Transmission Licence. However, only Balancing Services Use of System (BSUoS) charges may be modified by Trading Units, Transmission Network Use of System (TNUoS) charges are unaffected By Trading Unit status.

BSUoS charges, covering the costs of balancing mechanism actions plus the cost of National Grid's Balancing Services contracts and other related costs, are charged pro-rata on the BM Unit Credited Energy Volumes (CEV) for BM Units in delivering Trading Units and minus one times CEV for BM Units in offtaking Trading Units.

BM Units that are registered in Trading Units will be charged on a net Trading Unit basis i.e. if a BM Unit is exporting to the system and is within a Trading Unit that is offtaking from the system then the Lead Party for the BM Unit will be paid the BSUoS charge. Conversely, if a BM Unit is importing from the system in a delivering Trading Unit then the Lead Party for the BM Unit will be paid the BSUoS charge. The one exception to this payment rule is Exemptable Embedded Large Power Stations (EELPS) who have a Bilateral Embedded Generation Agreement (BEGA) with National Grid. In this case it is the party associated with the BM Unit who has the Connection and Use of System Code (CUSC) agreement with National Grid who is liable for BSUoS payments.

This is equivalent to the treatment in the BSC for BSC Costs and RCRC, except that National Grid charges (or payments) are paid wholly by (or to) the Lead Party or CUSC party, and not split between the Lead Party and any Subsidiary Parties.

References

The classification of BM Units as Production and Consumption, including the role of Trading Units in that classification, is covered in Section K of the BSC.

The allocation of Credited Energy Volumes according to the Production or Consumption status of BM Units, the allocation of imbalances, the application of Transmission Loss Multipliers, and the allocation of Residual Cashflow Reallocation Cashflow is covered in Section T of the BSC

The principles of BSC Costs are described in Section D of the BSC.