## Issue Form - BSCP40/04

Issue Number: 54

(mandatory by BSCCo)

**Issue Title** (Mandatory by originator)

Discrepancies between the points of measurement required in the BSC and the CoPs and the physical points of connection

**Issue Description** (*Mandatory by originator*)

## Background

In November 2013 ELEXON presented a paper (<u>ISG151/01</u>) to the Imbalance Settlement Group (ISG) outlining its concerns about discrepancies between the Balancing and Settlement Code (BSC) requirement to measure flows of electricity at Systems Connection Points (SCPs) and Boundary Points (BPs) to the Total System<sup>1</sup>, certain Defined Metering Points (DMP) in the Half Hourly (HH) Codes of Practice (CoPs) and the actual physical points of connection at certain types of sites. ELEXON proposed some potential solutions to the BSC and DMP discrepancies including updating the DMP for Interconnectors to either be more generic than it is currently or by adding descriptions of new Interconnectors to it.

The ISG suggested that ELEXON discuss the issues/solutions presented to it at an industry forum and also expressed concern about the lack of validation of power transformer and/or line loss compensation factors as part of the Metering Dispensation application process. This Issue has been raised to consider the issues/solutions further and the ISG's concern about validating loss correction factors as part of the Metering Dispensation application process.

## **BSC Requirements**

Section  $K^2$  of the BSC requires Parties who are responsible for flows of electricity (i.e. imports and exports) between Systems at SCPs and the flows of electricity (i.e. Imports and Exports) to or from Plant or Apparatus connected to the Total System at BPs, to be measured and recorded by compliant Metering Equipment.

Section L<sup>3</sup> requires Metering Equipment to comply with the relevant metering Code of Practice at the time the Metering Equipment is first registered for Settlement as a Metering System or be the subject of, and comply with, a Metering Dispensation. The Metering Dispensation process is set out in BSCP32<sup>4</sup> and Metering Dispensation applications need to be approved by the BSC Panel<sup>5</sup>. This process can take six to eight weeks as applications need to be validated by ELEXON, reviewed by an Industry expert group and may need to be presented for approval to both the ISG and the Supplier Volume Allocation Group (SVG), depending on the applicable CoP.

As well as defining the accuracy class of individual items of Metering Equipment, the CoPs

<sup>&</sup>lt;sup>1</sup> The Total System is defined in Section X, Annex X-1 as the Transmission System and each Distribution System.

<sup>&</sup>lt;sup>2</sup> 'Classification and Registration of Metering Systems and BM Units'

<sup>&</sup>lt;sup>3</sup> 'Metering'

<sup>&</sup>lt;sup>4</sup> 'Metering Dispensations'

<sup>&</sup>lt;sup>5</sup> The BSC Panel has delegated responsibility for the CoP documents to two of its BSC Panel Committees: the Imbalance Settlement Group and the Supplier Volume Allocation Group. ISG is responsible for the CoP 1, 2, 3 and 4 documents and SVG is responsible for the CoP 3, 4, 5, 6, 7, 8, 9 and 10 documents. Metering Dispensation applications against CoPs 3 and 4 therefore need to be approved by both committees

also define the points at which measurement of electricity is required and the limits of overall accuracy of measurement required at these points. These points of measurement are called the DMPs and are set out in Appendix A of the HH CoPs. Metering Equipment cannot always be installed at the DMP for practical or financial reasons so where the Actual Metering Point (AMP) doesn't coincide with the DMP a Metering Dispensation needs to be approved. Compensation for electrical losses, in power transformers and/or lines, to the DMP need to be considered and, if required, implemented in the Meter itself or in the data collector's system (e.g. via the Aggregation Rule, for CVA Registered Metering Systems). Similarly, if Metering Equipment can be installed at the DMP but this doesn't coincide with the point of connection a Metering Dispensation needs to be approved to correct for losses from the DMP to the point of connection.

The majority of the DMPs listed in Appendix A of the HH CoPs are defined as 'at the points of connection' between Systems (i.e. at SCPs) or between Systems and Customers/Generating Plant (i.e. at BPs).

However, there are two exceptions:

- 1. Between the Transmission System operator and a single Licenced Distribution System Operator (LDSO) (with no other parties connected) the DMP is defined as 'at the lower voltage side of the supergrid connected transformer' (SGT); and
- 2. Between the Transmission System operator and Generating Plant the DMP is defined as 'at the high voltage side of the generator and station transformers'.

Where these DMPs do not coincide with the actual point of connection then this can result in applications for Metering Dispensations being made by the Registrant to correct for losses to the point of connection. Typically, in the case of bullet 1, this distance can range from tens of metres to hundreds of metres of overhead line or underground cable.

In addition to the exceptions identified above, one DMP description is very specific about the location of the DMP for two Interconnectors and does not include any reference to any other existing Interconnectors, i.e.:

3. Between the Transmission System operator and an External System the DMPs are specifically defined as certain points on circuits at the Sellindge (for the Anglo French Interconnector) and Auchencrosh (for the Moyle Interconnector) substations.

No mention is made of the BritNed or East-West Interconnectors.

It should be noted that all of the issues identified above only affect CVA registered Metering Systems<sup>6</sup>.

## Justification for Examining Issue (Mandatory by originator)

1. In the past three years ELEXON has received six separate<sup>7</sup> Metering Dispensation applications<sup>8</sup> directly related to GSP Metering Equipment being located at the DMP

<sup>&</sup>lt;sup>6</sup> The DMPs concerned relate to Metering Systems that must be registered as CVA Metering Systems in the Central Meter Registration Service.

<sup>&</sup>lt;sup>7</sup> Eight in total due to two additional temporary Metering Dispensations being granted for Barking West GSP.

<sup>&</sup>lt;sup>8</sup> Leicester Road GSP, Tilbury GSP, Beddington GSP (pending), Bramford GSP, Barking West GSP and Bredbury GSP.

for new Super Grid Transformers (SGTs) but where the DMP does not coincide with the point of connection. The Registrant (i.e. the LDSO) has in each of these cases requested a Metering Dispensation to correct for the line/cable losses to the point of connection.

National Grid maintains a System Connection Point registrations tracker spreadsheet detailing upcoming new GSPs, new<sup>9</sup> circuits at existing GSPs and new Transmission System Boundary Points (TSBPs). At present<sup>10</sup> the tracker indicates that from now until end of 2014 six brand new GSPs will be added and thirty-four new circuits will be added at existing GSPs (there will also be at least fourteen new TSBPs in the next three years). The new GSPs and new circuits at existing GSPs could potentially<sup>11</sup> result in many applications for Metering Dispensations in order for the Registrant to correct for losses between the DMP and the point of connection.

Applications for Metering Dispensations take time and resource (including the Registrant's, ELEXON's, the Metering Dispensation Review Group's (MDRG) and that of the BSC Panel committees) to progress. By changing the DMP for a single LDSO connecting to the Transmission System to the point of connection and creating a generic Metering Dispensation for line/cable loss compensation the process can be shortened, enabling a more efficient registration process for such non-compliant Metering Systems. By also reviewing loss compensation as part both the proposed generic Metering Dispensation and site specific Metering Dispensation, where power transformer and/or line loss compensation is required, additional assurance can be provided that Settlement is being protected and electrical losses attributed to the relevant Party.

2. In Scotland it is usual for the Transmission System owners to provide the power transformer that connects Generating Plant (e.g. wind farms) to their Systems and Metering Equipment is installed on the lower voltage side of these power transformers at the point of connection. As part of BETTA 18 Metering Dispensations<sup>12</sup> were approved by the Authority for existing Generating Plant in Scotland to leave metering on the low voltage side of Transmission System connected transformers. While the majority of new Transmission System connections in Scotland since 2005 are measuring flows at the registered Boundary Points (consistent with the BSC itself) they arguably should be metered on the high voltage side of these power transformers and seeking a Metering Dispensation to compensate for losses to the point of connection (to be consistent with the CoPs).

By changing the DMP for Generating Plant connecting to the Transmission System to the point of connection any ambiguity about where Metering Equipment needs to be installed will be removed. Prospectively, the requirement to install Metering Equipment on the higher voltage side of the System owners power transformer and apply for a site specific Metering Dispensation for power transformer and, possibly, line/cable loss compensation to the point of connection on the low voltage side will

<sup>&</sup>lt;sup>9</sup> This includes 'like for like' replacement SGTs which could potentially change the circuit length and/or location of metering current and voltage transformers for the circuit to the point of connection with the LDSO.

<sup>&</sup>lt;sup>10</sup> The tracker is due to be updated with National Grid's year ahead plan for 2014/15 by 13 February 2014 so these numbers may change.

<sup>&</sup>lt;sup>11</sup> The distance between the measurement transformers and the point of connection being a key factor in determining whether the Registrant would wish to correct for any losses between them. These are confirmed during the registration of each new circuit and difficult and time consuming to identify up front.

<sup>&</sup>lt;sup>12</sup> Section I, Table C of the BSC details these.

also be removed.

3. It is anticipated that many new Interconnectors will be connected to the Total System in the future as networks become more integrated throughout Europe so it would be prudent to update the CoPs to clearly state the DMPs for all the Interconnectors and, ideally, remove the specific references to existing Interconnectors to prevent the need for further changes to the HH CoPs.

**Potential Solution(s)** (Optional by originator)

In its paper to the ISG ELEXON suggested some potential solutions to the issues identified. Further detail can be found in the paper. These are:

- 1. Raise a Change Proposal (CP) to change the DMP for a single LDSO connecting to the Transmission System to be 'at the point of connection'. This will need to be supplemented with a generic Metering Dispensation to allow for loss correction<sup>13</sup> if the Metering Equipment cannot be installed at the point of connection for practical or financial reasons, where this is the only non-compliance. The ISG expressed some concern that loss correction factors were not currently validated when Metering Dispensations are granted. ELEXON suggested that the MDRG may be best placed to confirm loss correction factors for site specific Metering Dispensations, where appropriate, and that the MDRG could also be included in a review process for the proposed generic Metering Dispensation.
- 2. Raise a CP to change the DMP for a Generator connecting to the Transmission System to be 'at the point of connection' and leave the issue of who provides the power transformers to other industry Codes and Ofgem.
- 3. There are two options to the third issue which could address this situation:
  - a. One would be to raise a CP to add in the new Interconnectors and define their DMPs specifically with reference to their individual circuits.
  - b. The other is to raise a CP to define the DMPs as 'at the point(s) of connection to the Transmission System operator', to future proof this aspect of the HH CoPs.

The ISG recommends that the issues and solutions identified above are discussed further by industry and that any recommendations from the discussions are presented to the ISG for further consideration.

<sup>&</sup>lt;sup>13</sup> Perhaps limited to line/cable loss correction only (i.e. not power transformer loss corrections).

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