CP Progression – CP1349

Meeting Name	Imbalance Settlement Group
Meeting Date	30 August 2011
Purpose of paper	For Decision
Summary	All BSC Codes of Practice do not recognise meter certification under the Measuring Instruments Directive. This report provides details of the background, solution, impacts and industry views of CP1349 'Changes to accommodate EU metering standards'. The SVG is requested to decide whether to approve the CP.

1. Why Change?

1.1 Background

1.1.1 The Measuring Instruments Directive (MID) was implemented in October 2006 to allow the free trade of measuring instruments across the European Union (E.U.) and to provide common rules for the use of such instruments. The aim is that this will create a common market for measuring instruments across the EU.

1.1.2 The MID applies to new Meter types installed at sites of up to 100kWh per hour (to align with the BSC's 100kW threshold for mandatory Half Hourly (HH) Meters). However, some Meters are capable of being used at sites which are either above or below 100kW. The issue is that the standards for such meters differ between the MID and the BSC Half Hourly Codes of Practice (CoPs) that apply for meters above 100kW (i.e. CoPs 5, 3 and 2).

1.1.3 Although technically equivalent the HH CoPs do not reference MID accuracy classes. Therefore it is not permissible to utilise a MID meter for use in the HH market.

1.1.4 SGS UK Limited (a MID Notified body) has confirmed that the class accuracies of the MID and Cops 5, 3 and 2 are as follows:

Class accuracy A is equivalent to CoP5 accuracy class 2

Class accuracy B is equivalent to CoP3 accuracy class 1

Class accuracy C is equivalent to CoP2 accuracy class 0.5s

1.1.5 We are currently adopting a pragmatic approach to this issue and the Technical Assurance Agent (TAA) is not raising non-compliances where a meter satisfies the relevant MID accuracy class rather than the equivalent CoP accuracy class, pending a decision on CP1349.

2. Solution

2.1 In order to align the standards the relevant MID accuracy class will need to be included in BSC CoPs 5, 3 and 2. This will allow Meters which carry suitable MID approvals to also be used for half hourly Settlement purposes where applicable. Therefore we propose to amend CoPs 5, 3 and 2 so that the use of Meter accuracy classes A, B and C are permitted for Settlement purposes in addition to those currently specified (classes 2, 1 and 0.5s). Making the proposed changes will deliver a clear, consistent and efficient resolution of the identified issue and avoid raising a number of non-compliances that are not technically justified.

3. Industry Views

3.1 CP1349 was issued for participant Impact Assessment via CPC00698. We received five responses all of which agreed with the proposed change.

3.2 The breakdown of responses is shown in the following table and the full collated participant responses to CP1349 are available on the ELEXON website here.

Respondent Role	Respondent Support		
	Yes	No	Neutral
LDSOs	1	0	0
DC/DA/MOA	1	0	0
Suppliers	1	0	0
Mixed (i.e. two or more of Supplier, Generator, Trader, Party agent or Distributor)	2	0	0
Total	**5**	**0**	**0**

3.3 None of the respondents identified any impact on them to implement CP1349.

3.4 One respondent stated that currently a Half Hourly Meter Operator Agent (HHMOA) would need to seek a metering dispensation to use certain meters in the HH world but that this would not be the case with the implementation of this CP. ELEXON agreed that CP1349 would mean a dispensation would not be required but noted that although the CP will open the way for these meters to be approved, a MOA or Supplier would still need to apply through BSCP601 'Metering Protocol Approval and Compliance Testing' for a MID meter to be approved for HH use and only if it meets all the requirements would it be approved. The respondent also asked whether the Compliance and Protocols Approvals List will be impacted by the CP. Our view is that it will not have a direct impact other than allowing current non-compliant meters to be considered compliant as a result of the CP.

3.5 The respondent has been contacted and is happy with the explanations given above.

3.6 Comments on the Proposed Redlining

3.6.1 No comments on the redlining were received.

4. Intended Benefits

4.1 There are no material reasons for Meters to be restricted to particular uses where compliance with the relevant technical requirements is achieved under different standards. Therefore this change will remove artificial barriers to the multi-purpose use of Meters that exist due to unaligned accuracy standards.

5. Impacts and Costs

5.1 The following table summarises the ELEXON effort required to implement CP1349. ELEXON will need to make the relevant documentation changes. There are no implementation impacts on market participants as the CP will just align the MID and BSC meter accuracy classes in the CoPs.

Market Participant	Cost/Impact	Implementation time needed
ELEXON (Implementation)	£480 based on 2 days work	23 February 2012

6. Implementation Approach

6.1 None of the respondents indicated any view on the number of days needed to implement the CP. The requested implementation date is February 2012, the next available BSC Release.

7. Recommendation

7.1 The SVG is invited to **APPROVE** CP1349 for implementation on 23 February 2012, as part of the February 2012 Release.

Attachments:
Attachment A – CP1349
Attachment B – Redlining CoP2
Attachment C – Redlining CoP3
Attachment D – Redlining CoP5

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Change Proposal – BSCP40/02	CP No: 1349 *Version No: v1.0* *(mandatory by BSCCo)*

Title

Changes to accommodate EU metering standards

Description of Problem/Issue

The Measuring Instruments Directive (MID) was implemented in October 2006 to allow the free trade of measuring instruments across the European Union (E.U.) and to provide common rules for the use of such instruments. The aim is that this will create a common market for measuring instruments across the 27 countries of the EU.

The result of this is that any meter approved by an E.U. Member State may then be used in any other. The MID covers a range of meter types, including (amongst others) gas, water and electricity.

With respect to the BSC, in the UK the MID applies to new Meter types installed at sites of up to 100kWh per hour (to align with the BSC's 100kW threshold for mandatory half hourly Meters).

However, some Meters are capable of being used at sites either above or below 100kW. The issue CP1349 aims to address is that the relevant standards for such Meters, differ between the MID and the BSC Metering Codes of Practice (CoPs) that apply for Meters above 100kW (i.e. CoPs 5, 3, and 2.

That is the standards applied to a Meter used below the 100kW threshold (where the MID standards apply) differ from the standards applied to the same Meter used above the 100kW threshold (where the CoP 5, 3 and 2 standards apply). Furthermore, it is understood that there are no material differences between the MID standards and the corresponding CoP 5, 3 and 2 standards.

The practical impact is that because the accuracy standards of the MID and BSC CoPs 5, 3, and 2 are unaligned, MID approved Meters are not qualified for use in half hourly Settlement under the BSC, despite being as accurate as required for that purpose. Therefore, Suppliers are not able to use a single Meter type for both purposes (unless potentially they obtain some form of Metering Dispensation under BSCP32 'Metering Dispensations', which will not necessarily be granted and which would be an inefficient way to tackle the issue). CP1349 seeks to amend CoPs 5, 3 and 2 so that Meters that have been given the relevant MID approval can also be used for half hourly Settlement.

Example of the issue:

Currently, a Meter which carries a MID approval will conform to an accuracy of, for example, Class A (approximately ±2%). BSC CoP5 requires Meters to conform to an accuracy standard of 2 (also approximately ±2%). But under the current arrangements these standards are not considered equivalent, therefore such a MID approved Meter cannot be considered compliant with CoP5 and may not be used even though it technically meets the approved accuracy standard.

We are currently adopting a pragmatic approach to this issue and the TAA is not to raising non-compliances where a meter satisfies the relevant MID accuracy class rather than the equivalent CoP accuracy class, pending a decision on CP1349. Making the proposed changes will deliver a clear, consistent and efficient resolution of the identified issue and avoid raising a number of non-compliances that are not technically justified.

Proposed Solution

CoPs 2, 3, and 5 need to be amended to include the relevant MID accuracy class as well as the currently specified standards. This will allow Meters which carry suitable MID approvals (and therefore comply with its standards) to also be used for half hourly Settlement purposes where applicable. Note that the accuracy standards of the MID do not meet the accuracy requirements of CoP1 therefore CoP1 is not affected by this change.

SGS UK Limited (a MID Notified Body) has confirmed that the class accuracies of the MID are equivalent to those of CoPs 5, 3, and 2 as follows:

Class accuracy A is equivalent to CoP5 accuracy class 2
Class accuracy B is equivalent to CoP3 accuracy class 1
Class accuracy C is equivalent to CoP2 accuracy class 0.5s

Therefore we propose to amend CoPs 5, 3 and 2 so that the use of Meter accuracy classes A, B and C are permitted for Settlement purposes in addition to those currently specified (classes 2, 1 and 0.5s). The proposed redlined changes are detailed in the attached documents.

Justification for Change

There are no material reasons for Meters to be restricted to particular uses where compliance with the technical requirements of different standards is achieved. Therefore this change will remove artificial barriers to the multi-purpose use of Meters that exist due to unaligned accuracy standards.

To which section of the Code does the CP relate, and does the CP facilitate the current provisions of the Code?

This CP relates to Section L, and it currently facilitates the current provisions.

Estimated Implementation Costs

£480 based on 2 days work

Configurable Items Affected by Proposed Solution(s)

CoPs 2 , 3 and 5 requirement amendment. The proposed changes are attached to this CP.

Impact on Core Industry Documents or System Operator-Transmission Owner Code

None Identified

Related Changes and/or Projects *(mandatory by BSCCo)*

None

Requested Implementation Date ***(mandatory by originator)***

February 2012

Reason:

Next available BSC Release

Version History ***(mandatory by BSCCo)***

1.0 issued for industry Impact Assessment

Originator's Details:

Organisation……..ELEXON
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Telephone number……020 7380 0407
Date……01/06/11

Attachments: Yes
Attachment A: CoP2 redlining
Attachment B: CoP3 redlining
Attachment C: CoP5 redlining

CP1349 Redlined against CoP2 Issue 4 v9.0

The Foreword is not impacted by CP1349.

Section 1 is not impacted by CP1349.

2 REFERENCES

The following documents are referred to in the text:-

BS EN 50470 – 3	Electricity metering equipment (a.c.) - Part 3: Particular requirements – Static meters for active energy (class indexes A, B and C)
BS EN 60044-3	Instrument transformers. Combined transformers
BS EN 62053-11	Electricity metering equipment (a.c.). Particular requirements. Electromechanical meters for active energy (classes 0.5, 1 and 2)
BS EN 62053-22	Electricity metering equipment (a.c.). Particular requirements. Static meters for active energy (classes 0.2 S and 0.5 S)
BS EN 62053-23	Electricity metering equipment (a.c.). Particular requirements. Static meters for reactive energy (classes 2 and 3)
BS EN 62056-21	Electricity metering. Data exchange for meter reading, tariff and load control. Direct local data exchange
BS 5685 Part 4	Specification for Class 3 Var-Hour Meters
IEC 60044-1	Instrument transformers. Current transformers
IEC 60044-2	Instrument transformers. Inductive voltage transformers
Balancing and Settlement Code	Definitions, Section X; Annex X-1 and Section L and BSC Procedures
Code of Practice Four	Code of Practice for Calibration, Testing and Commissioning Requirements for Metering Equipment for Settlement Purposes
BSC Procedures	BSCP06, BSCP32, BSCP601
Electricity Act 1989	Schedule 7 as amended by Schedule 1 to the Competition and Services (Utilities) Act 1992.

Section 3 is not impacted by CP1349.

Section 4 is not impacted by CP1349.

Sections 5.1 and 5.2 are not impacted by CP1349.

5.3 Meters

The Meters may be either static or induction disc types.

For each circuit main and check Active Energy Meters shall be supplied. These Meters shall meet the requirements of either BS EN 62053-22 Class 0.5S or BS EN 50470-3 Class C, or BS EN 62053-11 class 0.5 except where the overall accuracy as defined in Clause 4.2.1 is required in the range "Below 5% to 1%" of Rated Measuring Current. Subject to the agreement of the Panel or Registrant where system or plant conditions permit either the Import or Export Meters may be omitted.

All Meters shall be set to the actual primary and secondary ratings of the measurement transformers and the actual ratios displayed on the display or nameplate of the Meter.

Active Energy Meters provided for the metering of supplies to customers shall be in accordance with Schedule 7 of the Electricity Act 1989.

For each circuit only main Reactive Energy Meter(s) need be supplied. The Reactive Energy Meters shall meet the requirements of either BS EN 62053-23 Class 3.0 or BS 5685 Part 4.

For existing metering installations a Reactive Meter connected in a PARh Meter configuration may be retained.

Active Energy Meters shall be configured such that the number of measuring elements is equal to or one less than the number of primary system conductors. These include the neutral conductor, and/or the earth conductor where system configurations enable the flow of zero sequence energy.

All Meters shall be labelled or otherwise be readily identifiable in accordance with Appendix B.

All Meters shall include a non-volatile Meter Register of cumulative energy for each measured quantity. The Meter Register(s) shall not roll-over more than once within the normal Meter reading cycle.

Meters which provide data to separate Outstations shall for this purpose provide an output per measured quantity.

For Meters using electronic displays due account shall be given to the obligations of the Central Data Collection Agent (CDCA) or other Data Collectors to obtain Meter readings. For example, where a Metering System is employed on multiple circuits, a Voltage Selector Relay or other similar method should be used to maintain the Meter display in the event of a circuit being de-energised where this is reasonably practical.

Fusing shall be placed as close as practicable to the VT. In addition, means of isolation shall be provided locally for each Meter, any additional burden and their associated test facilities in accordance with Appendix C.

Sections 5.4 to 5.7 are not impacted by CP1349.

Section 6 is not impacted by CP1349.

Section 7 is not impacted by CP1349.

Appendices A to F are not impacted by CP1349.

CP1349 Redlined against CoP3 Issue 5 v9.0

The Foreword is not impacted by CP1349.

Section 1 is not impacted by CP1349.

2 REFERENCES

The following documents are referred to in the text:-

BS EN 50470 – 3	Electricity metering equipment (a.c.) - Part 3: Particular requirements – Static meters for active energy (class indexes A, B and C)
BS EN 61036	AC Static Watthour Meters for Active Energy (Classes 1 and 2)
BS EN 60521	Specification for Class 0.5, 1 and 2 Single-Phase and Polyphase, Single Rate and Multi-Rate Watt-Hour Meters
BS EN 61268	Alternating Current Static Var-Hour Meters for Reactive Energy (Classes 2 and 3)
BS 5685 Part 4	Specification for Class 3 Var-Hour Meters
IEC Standard 44-3	Instrument Transformers - Combined Transformers
IEC Standard 185	Current Transformers
IEC Standard 186	Voltage Transformers
BS EN 61107	Data Exchange for Meter Reading, Tariff and Load Control. Direct Local Exchange.
Balancing and Settlement Code	Section X; Annex X-1 and Section L and BSC Procedures
Code of Practice Four	Code of Practice for Calibration, Testing and Commissioning Requirements for Metering Equipment for Settlement Purposes
BSC Procedures	See BSC Procedures
Electricity Act 1989	Schedule 7 as amended by Schedule 1 to the Competition and Services (Utilities) Act 1992.
Meter Operation Code of Practice Agreement	Agreement between Meter Operators and Distribution Businesses governing arrangements for safety and technical competence.
Standard Frequency and Time Signal Emission	International Telecommunication Union - RTF.460(ISBN92-61-05311-4)

Section 3 is not impacted by CP1349.

Section 4 is not impacted by CP1349.

Sections 5.1 and 5.2 are not impacted by CP1349.

5.3 Meters

The Meters may be either static or induction disc types.

For each circuit main and check Active Energy Meters shall be supplied. These Meters shall meet the requirements of either BS EN 61036 Class 1 or BS EN 50470-3 Class B or BS EN 60521 Class 1.

Active Energy Meters provided for the metering of supplies to customers shall be in accordance with Schedule 7 of the Electricity Act 1989.

For each circuit, only main Reactive Energy Meter(s) need be supplied. The Reactive Energy Meters shall meet the requirements of either BS EN 61268 Class 3 or BS 5685 Part 4.

Active Energy Meters shall be configured such that the number of measuring elements is equal to or one less than the number of primary system conductors. These include the neutral conductor, and/or the earth conductor where system configurations enable the flow of zero sequence energy.

All Meters supplied via measurement transformers shall be set to the actual primary and secondary ratings of the measurement transformers and the ratios displayed as follows:-

(i) For Meters separate from the display and/or Outstation the ratios shall be recorded on the nameplate of the Meter.

(ii) For static Meters combined with the display and/or the Outstation, the ratios shall be displayed and downloaded during the interrogation process. In addition, the compensation factor that has been applied for measurement transformer errors and/or system losses, where this is a constant factor applied at security level 3 shall be similarly displayed and downloaded.

All Meters shall include a non-volatile Meter Register of cumulative energy for each measured quantity (see 4.1.1). The Meter Register(s) shall not roll-over more than once within the normal Meter reading cycle.

Meters which provide data to separate Outstations shall for this purpose provide an output per measured quantity (see 4.1.1).

For Meters using electronic displays due account shall be taken of the obligations of the Central Data Collector Agent (CDCA) or other Data Collectors to obtain Meter readings, even when the circuit is de-energised.

CP1349 – Attachment B

All Meters shall be labelled or otherwise be readily identifiable with respect to their associated circuit(s), and in accordance with Appendix B.

Sections 5.4 to 5.7 are not impacted by CP1349.

Section 6 is not impacted by CP1349.

Section 7 is not impacted by CP1349.

Appendices A to E are not impacted by CP1349.

CP1349 Redlined against CoP5 Issue 5 v10.0

The Foreword is not impacted by CP1349.

Section 1 is not impacted by CP1349.

2 REFERENCES

The following documents are referred to in the text:-

BS EN 50470 – 3	Electricity metering equipment (a.c.) - Part 3: Particular requirements – Static meters for active energy (class indexes A, B and C)
BS EN 61036	AC Static Watthour Meters for Active Energy (Classes 1 and 2)
BS EN 60521	Class 0.5, 1 and 2 Alternating Current Watt-Hour Meters.
BS 7856	Code of Practice for Design of Alternating Current Watt-Hour Meters for Active Energy (Classes 1 & 2)
BS EN 61268	Alternating Current Static Var-Hour Meters for Reactive Energy (Classes 2 and 3).
BS 5685 Part 4	Specification for Class 3 Var-Hour Meters
IEC Standard 44-3	Instrument Transformers - Combined Transformers
IEC Standard 185	Current Transformers
IEC Standard 186	Voltage Transformers
BS EN 61107	Data Exchange for Meter Reading, Tariff and Load Control. Direct Local Exchange.
Balancing and Settlement Code	Section X; Annex X-1 and Section L and BSC Procedures
Code of Practice Four	Code of Practice for Calibration, Testing and Commissioning Requirements for Metering Equipment for Settlement Purposes
BSC Procedures	See BSC Procedures Index
Electricity Act 1989	Schedule 7, as amended by Schedule 1, to the Competition and Services (Utilities) Act 1992.
Meter Operation Code of Practice Agreement	Agreement between Meter Operators and Distribution Businesses governing arrangements for safety and technical competence
Standard Frequency and Time Signal Emission	International Telecommunication Union - RTF.460 (ISBN92-61-05311-4)

Section 3 is not impacted by CP1349.

Section 4 is not impacted by CP1349.

Sections 5.1 and 5.2 are not impacted by CP1349.

5.3 Meters

The Meters may be either static or induction disc types.

For each circuit, Active Energy Meters shall be supplied which shall meet the requirements of either BS EN 61036 Class 2 or BS EN 50470-3 Class A or BS EN 60521 and BS 7856 Class 2.

Active Energy Meters provided for the metering of supplies to customers shall be in accordance with Schedule 7 of the Electricity Act 1989.

For each circuit, Reactive Energy Meter(s) shall be supplied which shall meet the requirements of either BS EN 61268 Class 3 or BS 5685 Part 4.

Active Energy Meters shall be configured such that the number of measuring elements is equal to or one less than the number of primary system conductors. These include the neutral conductor, and/or the earth conductor where system configurations enable the flow of zero sequence energy.

All Meters supplied via measurement transformers shall be set to the actual primary and secondary ratings of the measurement transformers and the ratios displayed as follows:-

(i) For Meters separate from the display and/or Outstation the ratios shall be recorded on the nameplate of the Meter.

(ii) For static Meters combined with the display and/or the Outstation, the ratios shall be displayed and downloaded during the interrogation process. In addition, the compensation factor that has been applied for measurement transformer errors and/or system losses, where this is a constant factor applied at security level 3 shall be similarly displayed and downloaded.

All Meters shall include a non-volatile Meter Register of cumulative energy for each measured quantity (see 4.1.1). The Meter Register(s) shall not roll-over more than once within the normal Meter reading cycle.

Meters which provide data to separate Outstations shall for this purpose provide an output per measured quantity (see 4.1.1).

For Meters using electronic displays due account shall be taken of the obligations to obtain Meter Readings, even when the circuit is de-energised.

All Meters shall be labelled or otherwise be readily identifiable with respect to their associated circuit(s), and in accordance with Appendix B.

Sections 5.4 to 5.7 are not impacted by CP1349.

Section 6 is not impacted by CP1349.

Section 7 is not impacted by CP1349.

Appendices A to E are not impacted by CP1349.