

CP Assessment Report

CP1571 'Clarify the requirements for the number of Meter measuring elements and measurement transformers in the CoPs'

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About This Document



Not sure where to start? We suggest reading the following sections:

- Have 5 mins? Read section 1
- Have 15 mins? Read sections 1, 4, 5 and 6
- Have 30 mins? Read all sections
- Have longer? Read all sections and the annexes and attachments
- *You can find the definitions of the terms and acronyms used in this document in the [BSC Glossary](#)*

This document is the Change Proposal (CP) Assessment Report for CP1571 which Elexon will present to the ISG at its meeting on 10 January 2023 and the SVG at its meeting on 10 January 2023. The Committees will consider the proposed solution and the responses received to the CP Consultation before making a decision on whether to approve CP1571.

There are 4 parts to this document:

- This is the main document. It provides details of the solution, impacts, costs, and proposed implementation approach. It also summarises the ISG and SVG's initial views on the proposed changes and the views of respondents to the CP Consultation.
- Attachment A contains the CP proposal form.
- Attachment B contains the proposed redlined changes to deliver the CP1571 solution.
- Attachment C contains the full responses received to the CP Consultation.



Committee

Imbalance Settlement Group (ISG)

Recommendation

Approve

Implementation Date

29 June 2023

(June 2023 Release)



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1. Summary

Why change?

The [Metering Codes of Practice](#)¹ (CoPs) specify the number of measuring elements required to be metered in relation to the number of primary system conductors. However, the requirements don't appear to be sufficiently clear or are not being complied with, highlighting a scenario where a Meter Operator Agent (MOA) reported the lack of clarity on determining the number of measuring elements required by the CoPs.

Solution

CP1571 proposes to clarify the requirements to equipment owners regarding the number of Current Transformers (CT) needed, and the possible need for a Voltage Transformer (VT) neutral.

Impacts and costs

CP1571 will have no impact on BSC Parties.

The central implementation cost for CP1571 will be <£1k to update the relevant documents.

Implementation

CP1571 is proposed for implementation on 29 June 2023 as part of the standard June 2023 BSC Release.

Recommendation

CP1571 is recommended for approval and implementation on 29 June 2023 as part of the standard June 2023 BSC Release.

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¹ <https://bscdocs.elexon.co.uk/codes-of-practice>

2. Why Change?

What is the issue?

At the second subgroup meeting under [Issue 93 'Review of the BSC metering Codes of Practice'](#)², the Workgroup agreed to raise a CP that addresses the 'Measuring elements on neutral and earth conductors' aspect of Issue 93.

Section 5.3 'Meters' of metering Codes of Practice (CoPs) 1, 2, 3 and 5 requires Active Energy Meters to have, or be configured with, the correct number of measuring elements compared to the number of primary system conductors, with clarification that, in certain primary system configurations, neutral and/or earth conductors may need to be considered in the total number of primary system conductors.

However, the requirements don't appear to be sufficiently clear, or are not being complied with, highlighted by a scenario where an MOA reported that the CoPs lack clarity in determining the number of measuring elements required.

Linked to this lack of clarity in determining the number of measuring elements required is that section 5.1 'Measurement Transformers' of CoPs 1, 2, 3 and 5 makes no reference to providing a suitable number of CTs, and a VT neutral connection (where required), based on the number of primary system conductors, so this matches up with the number of measuring elements provided, or configured, in the Meter that the MOA installs.

This has resulted in issues with the accuracy of Settlement data where the equipment owner has provided an incorrect number of high voltage (HV) CTs, and no neutral connection on the VT. This results in the Metering System being inaccurate where the load across the phases, is, or becomes, unbalanced.

CoPs 6, 7, 8, 9 and 10 are not impacted as these CoPs apply to low voltage circuits where the risk of providing an incorrect number of CTs (no VT is required) is very low, e.g. for a 1 phase 2 wire (i.e. one phase wire and one neutral wire) system configuration, one CT and a 'phase to neutral' voltage connection is required. For a 3 phase 4 wire system configuration (i.e. three phase wires and one neutral wire), three CTs are required with three 'phase to neutral' voltage connections.

Background

Issue 93

The [Association of Meter Operators \(AMO\)](#)³ raised Issue 93 on 15 January 2021 to review the metering CoPs, which have never been reviewed in totality before. The main aim of the review was to improve the CoPs, and where appropriate, remove existing perceived ambiguities and obsolete processes and technology.

The Group considered 18 issues, which the Group referred to as Aspects, over 12 meetings, resulting in 13 CPs and one Modification being recommended.

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² <https://www.elexon.co.uk/smg-issue/issue-93/>

³ <https://meteroperators.org.uk/>

Codes of Practice

The CoPs set out the minimum engineering and data requirement that Metering Systems must adhere to in order to be classified as compliant Metering Systems under the BSC. There are various metering CoPs (1, 2, 3, 5, 6, 7 and 10 for Half Hourly (HH) Metering Systems and 8 and 9 for Non-HH (NHH) Metering Systems). CoP4⁴ is different as it sets out the minimum requirements for calibrating, testing and commissioning the Metering Equipment installed in Metering Systems under all the other CoPs. The CoPs are owned by the ISG and the SVG, and changes to the CoPs must be approved by the ISG and SVG dependent on ownership defined in the [BSC Baseline Statement](#)⁵.

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⁴ Code of Practice for the Calibration, Testing and Commissioning Requirements of Metering Equipment for Settlement Purposes

⁵ <https://www.elexon.co.uk/documents/bsc-codes/bsc-sections/bsc-baseline-statement-2/>

3. Solution

Proposed solution

CP1571 proposes to make changes to CoPs 1, 2, 3, and 5 in section 5.3 'Meters', to delete the sentence: 'These include the neutral conductor, and/or the earth conductor where system configurations enable the flow of zero sequence energy' and refer to having to match the configuration provided by the owner of the measurement transformers in compliance with section 5.1 'Measurement Transformers'.

CP1571 will also amend section 5.1 'Measurement Transformers', of CoPs 1, 2, 3 and 5 (where measurement transformer owners are more likely to refer to) to clarify the requirements to measurement transformer owners. This CP proposes to add a paragraph on the number of CTs, and possible need for a VT neutral, to be provided in section 5.1 'Measurement Transformers'. The proposed wording is:

'The number of CTs provided shall be equal to or one less than the number of primary system conductors. These include the neutral conductor and/or earth conductor, where system configurations enable the flow of zero sequence energy. Consideration shall be given as to whether a VT neutral is required to be provided, depending on the number of CTs provided.'

Proposer's rationale

There have been three reported instances of an unsuitable configuration of metering being installed on sites (e.g. wrong number of CTs and no VT neutral). A lack of clarity in the CoPs has been cited as the reason. Any issue with the accuracy of the Metering System can have an impact on Settlement data. This CP seeks to provide that clarification to owners of measurement transformers, in the section of the CoPs most relevant to them (i.e. 5.1 'Measurement Transformers'), rather than only being in section 5.3 'Meters', which is relevant to the MOA.

Without additional clarification in the CoPs there is a risk that this issue will occur again and negatively impact the accuracy of Settlement data.

Proposed redlining

The proposed redlining to CoPs 1, 2, 3 and 5 to deliver the solution can be found in Attachment B.

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4. Impacts and Costs

BSC Party & Party Agent impacts and costs

There will be no impact on or costs to BSC Parties as this CP only provides clarification on existing requirements. This was confirmed by the CP consultation.

Central impacts and costs

Central impacts

This CP solution only affects BSC documentation, specifically CoPs 1, 2, 3 and 5. No BSC Central Systems will be impacted.

Central Impacts	
Document Impacts	System Impacts
<ul style="list-style-type: none">• Code of Practice 1: The Metering of Circuits with a Rated Capacity Exceeding 100 MVA for Settlement Purposes⁶• Code of Practice 2: The Metering of Circuits with a Rated Capacity not Exceeding 100 MVA for Settlement Purposes⁷• Code of Practice 3: The Metering of Circuits with a Rated Capacity not Exceeding 10 MVA for Settlement Purposes⁸• Code of Practice 5: The Metering of Energy Transfers with Maximum Demand of up to (and Including) 1MW for Settlement Purposes⁹	<ul style="list-style-type: none">• None

⁶ <https://bscdocs.elexon.co.uk/codes-of-practice/code-of-practice-1-the-metering-of-circuits-with-a-rated-capacity-exceeding-100-mva-for-settlement-purposes>

⁷ <https://bscdocs.elexon.co.uk/codes-of-practice/code-of-practice-2-the-metering-of-circuits-with-a-rated-capacity-not-exceeding-100-mva-for-settlement-purposes>

⁸ <https://bscdocs.elexon.co.uk/codes-of-practice/code-of-practice-3-the-metering-of-circuits-with-a-rated-capacity-not-exceeding-10-mva-for-settlement-purposes>

⁹ <https://bscdocs.elexon.co.uk/codes-of-practice/code-of-practice-5-the-metering-of-energy-transfers-with-maximum-demand-of-up-to-and-including-1mw-for-settlement-purposes>

Impact on BSC Settlement Risks

Impact on BSC Settlement Risks

Clarification on installation requirements should reduce the likelihood of errors in Metering Equipment configurations and have a positive impact on:

[Risk 003 'Metering Equipment installation, programming, maintenance and Commissioning \(SVA\)'](#)¹⁰;

and

[Risk 020 'Metering Equipment installation, programming, maintenance and Commissioning \(CVA\)'](#)¹¹.

Central costs

The central implementation costs for CP1571 will be approximately <£1k.

¹⁰ <https://www.elexon.co.uk/reference/performance-assurance/performance-assurance-processes/003-sva-risk-metering-equipment-installations-are-incorrect/>

¹¹ <https://www.elexon.co.uk/reference/performance-assurance/performance-assurance-processes/performance-assurance-risk-evaluation-register/020-cva-risk-cva-metering-equipment-installation-and-commissioning/>

5. Implementation Approach

Recommended Implementation Date

CP1571 is recommended for implementation on 29 June 2023 as part of the standard June 2023 BSC Release.

This is the earliest available release in order to realise the benefits of this CP as early as possible.

All respondents to the consultation agreed with the implementation approach.

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6. Initial Committee Views

ISG's initial views

The ISG had no comments.

SVG's initial views

The SVG had no comments.

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7. Industry Views

This section summarises the responses received to the CP Consultation. You can find the full responses in Attachment C. We received one response with represented roles of MOA, Data Collector (DC) and Data Aggregator (DA).

Summary of CP1571 CP Consultation Responses				
Question	Yes	No	Neutral/No Comment	Other
Do you agree with the CP1571 proposed solution?	1	0	0	0
Do you agree that the draft redlining delivers the intent of CP1571?	1	0	0	0
Will CP1571 impact your organisation?	0	1	0	0
Will your organisation incur any costs in implementing CP1571?	0	1	0	0
Do you agree with the proposed implementation approach for CP1571?	1	0	0	0
Do you have any further comments on CP1571?	0	1	0	0

Comments on the proposed redlining

There were no comments on the CP1571 proposed redlining.

8. Recommendations

We invite the **ISG** to:

- **APPROVE** the proposed changes to CoP1, CoP2, CoP3 for CP1571; and
- **APPROVE** CP1571 for implementation on 29 June 2023 as part of the standard June 2023 Release.
- **NOTE** that CP1571 will also be presented for decision to the
 - SVG on 10 January 2023.