



Sample Meter Calibrations Process

This document covers:

- Why you need to carry out sample Meter Calibrations
- What size the sample should be
- How you choose the sample meters

Who is this Guidance For?

This guidance has been prepared to help you, the Meter Operator Agent (MOA), understand your obligation under the [Balancing and Settlement Code \(BSC\)](#) and [Code of Practice 4 \(CoP4¹\)](#) to perform sample Meter Calibrations.

Why do I have to carry out Sample Meter Calibrations?

You have been appointed by a BSC Party (the Registrant) to install, commission, test, maintain, rectify faults and provide a sealing service on their behalf for the Metering Equipment that they have registered in Settlements as a Metering System. **CoP4** sets out the requirements for calibrating, testing and commissioning Metering Equipment for Settlements purposes and one of the requirements within CoP4 is to carry out sample Meter Calibrations.

Why Calibrate a Sample of Meters?

Periodic Calibrations

Under CoP4 you are required to periodically calibrate all Half Hourly Meters to ensure they remain accurate for use in Settlement over time (see Section 5.1 of CoP4). The elapsed times for periodic Calibrations are defined in CoP4, Appendix A and depend on which CoP the Meters are registered against. For example, if a Meter is installed to CoP1 you will need to carry out its first periodic Calibration by year five (or 10, depending on the chosen Calibration regime) after the initial (Type A) Calibration. For CoP5 this will be by year 15.

Sample Calibrations

New Meter Types introduced into the market have no history as to their medium or long term performance and could become inaccurate before their periodic Calibration is due. Therefore it is necessary to calibrate relatively early in a new Meter Type's life to show any trends towards accuracy degradation. These Calibrations are carried out on a sample basis by Meter Type.

Where is This Requirement to Calibrate a Sample of Meters?

Section 5.2 of **CoP4** requires you to sample calibrate certain Meter Types, as specified by ELEXON in the Sample Meter Calibration list. This list is in the CoP Compliance and Protocol Approval spreadsheet which can be found on the [Codes of Practice page](#) of the [BSC Website](#). These sample Calibrations need to take place a number of years after the date of the individual Meter's initial Calibration (i.e. a

¹ Code of Practice 4: The Calibration, Testing and Commissioning Requirements of Metering Equipment for Settlement Purposes

Type A Calibration) and, for each year following that, for a total period of five years. The results of each year's sample Calibrations need to be provided in a format specified in Appendix E, Form E2 (Meter Sampling Report) of CoP4 and sent to us at metering@elexon.co.uk before the end of January in the following year.

For example, sample Calibrations conducted from January – December 2010 (i.e. 'Sample Calibration Year 2010') will need to be submitted to us before the end of January 2011. An example Meter Sampling Report form (Form E2 of CoP4) is provided in **Appendix 1** to this guidance. This example form is based on the worked example at the end of this guidance.

We will consolidate the results of these sample Calibrations and take a paper to both of the relevant BSC Panel committees, i.e. the Imbalance Settlement Group (ISG) and the Supplier Volume Allocation Group (SVG). We need to take a paper to both of these Panel committees because the BSC Panel has delegated responsibility for CoP4 to the ISG and SVG jointly.

What is the Requirement?

From November 2008 you are required to sample calibrate 2% of the qualifying population of the relevant Meter Type(s) you are responsible for each year that the relevant Meter Type appears on the Sample Meter Calibration list.

We will identify the relevant Meter Types in November before the beginning of each Sample Calibration Year. We will keep a Meter Type on the list for five years. Therefore each year for that five year period you will need to re-establish how many of those relevant Meter Types, that you are responsible for, qualify for sample Calibrations. We recommend you do this in December before the beginning of the next Sample Calibration Year.

How do I establish how many Meters of the Relevant Type I have to Sample Calibrate?

To establish how many Meters of the relevant type you have to carry out sample Calibrations on you first need to identify how many Meters of the relevant type(s) you are responsible for (if any). Next you need to establish how many of them qualify (if any) for a sample Meter Calibration in the coming year. You can do this by listing all of the Meters of relevant Meter Type(s) that you are responsible for and then establishing which of them has a Type A Calibration date older than either two years (for CoP1 or 2 Meters) or eight years (for CoP3, 5, 6 or 7 Meters). We suggest you use the date of 1 January of the upcoming Sample Calibration Year to do this (e.g. search backwards from 01 January 2010 for Sample Calibration Year 2010) to find any relevant Meters which have a Type A Calibration date older than either two years (CoP1/2) or eight years (CoP3, 5, 6 or 7). The results you get from that search will initially qualify for the 2010 Sample Calibration Year. You will then need to remove any individual Meters from this initial qualification list which have either already been periodically calibrated or have already been sample calibrated in a previous year. You will need to sample calibrate 2% of the number of Meters left on the list.

What if I don't have any Meters of the Relevant Type, or I do but none Qualify for a Sample Calibration?

If you do not have any of the relevant Meter Type(s) in the population of Meters that you are responsible for, or you do but none of them qualify, then you must still submit a 'nil' report (Form E2) to us every January. We need you to do this so that we know who has yet to submit their report each year.

What if I have Less than 100 Qualifying Meters?

If you establish that the number of qualifying Meters to be sample calibrated in a year is less than 100 then you must sample calibrate at least two Meters (i.e. 2% of 100).

For example, if you are responsible for a total of 120 Meters of Meter Type X (which happens to be a CoP1 compliant Meter which has been identified for sample Calibrations) and 55 qualify (as they have

Type A calibration dates which are more than two years old), then you must sample calibrate two qualifying Meters as a minimum in the upcoming Sample Calibration Year.

What if I already Periodically Calibrate more than the Required Number of Qualifying Sample Meter Types?

If, as part of your periodic Calibration programme, you calibrate the required amount (2%) of relevant Meter Types that qualify for a sample Calibration then you will not have to carry out additional sample Meter Calibrations in that year. Simply enter the total number of Calibrations you have conducted in that year for periodic Calibrations into Form E1 (Meter Calibration Report) and then repeat this data (for the required percentage of qualifying Meters only) in Form E2. In this situation the results for the Meters selected for Form E2 should be randomly selected for inclusion (i.e. not be biased in any way by the results obtained during the Calibration).

What Meter Types are Specified for Sample Calibrations?

We will select either new Meter Types² and/or Meter Types where there is evidence suggesting a particular Meter Type is not performing as expected. These Meters will be listed in the Sample Meter Calibration list in the CoP Compliance and Protocol Approval spreadsheet which you can find on the [Codes of Practice page](#) of the [BSC Website](#).

Example

Meter Type X and Y appear on the specified Meter Type list for a five year period. For the upcoming Sample Calibration Year (e.g. 2010) you will need to prepare a plan to carry out these sample Calibrations. You could identify the number of Meters that require a sample Calibration in the following way:

If you query your systems (or check your paperwork) and find 400 Meters of Meter Type X and that 200 are installed against CoPs 1 and 2, then the next step is for you to identify the date of the Type A calibration for these 200 Meters. 2% of those that have a Type A calibration date of more than two years old will qualify for sample Calibrations. So, if you have identified 150 Meters of this 200 Meter population with a Type A Calibration date more than two years old then you would schedule three Meters (150 x 2%) to be sample calibrated in the upcoming Sample Calibration Year. This process is repeated for CoP3, 5, 6 and 7 for this Meter Type. You will need to repeat this process each year that Meter Type X appears on the Sample Meter Calibration list bearing in mind the Meters that have already been sample Calibrated or have had a periodic Calibration already should not be included in the number of Meters that meet the qualification criteria (i.e. Type A Calibration date greater than two years).

You will then need to repeat the whole process above with the remaining Meter Type identified (i.e. Meter Type Y).

² Meter Types which have been recently compliance tested in accordance with BSCP601.

The Table below shows you the process of identifying the number of sample Calibrations required:

Sample Calibration Year	2010	2010
Meter Type	X	Y
Total population of Meter Type (responsible for)	400	1500
No. installed in CoP1/2	200	300
No. installed in CoP3/5/6/7	200	1000
No. installed in other CoPs	0	200
No. of CoP1/2 Meters with a Type A calibration date of before 1/1/2008	150	40
No. of CoP3/5/6/7 Meters with a Type A calibration date of before 1/1/2002	0	0
2% of CoP1/2 Meters (≥ 2 years since Type A)	3 (2% of 150)	2 (2% of 40 = 0.8)
2% of CoP3/5/6/7 Meters (≥ 8 years since Type A)	0	0
Total sample Calibrations for 2010 per Meter Type	3	2

This worked example is represented in the example Meter Sampling Report form (Form E2 of CoP4) which is provided in **Appendix 1** below.

Appendix 1 – Example of Form E2:

E2 Meter Sampling Report for Calendar Year ____2010 ____ Meter Operator Agent ____ABC Metering Ltd _____

Meter Make and Model	No of Meters in Service	Number of Meters Calibrated (Type B Cal)	Number of Meters Outside CoP4 limits ³	Number of Meters Adjusted	Comments ⁴
X	400	3	0	0	Tested import direction (at all required test points) and one test point in export direction as same measuring element is used for both flow directions.
Y	1500	2	1	0	As above. Meter found to be outside limits and was replaced. The Calibration report for this Meter is attached on a separate sheet.

³ For Meters that are found outside of CoP4 limits of error, please provide a copy of the Calibration report on a separate sheet.

⁴ Comments shall include assumptions made during testing (e.g. tested import flow direction and Meter passed, only one test point used in export direction as the same measuring element is used by the Meter in both directions of energy flow)

Need more information?

You can find the **Codes of Practice** here: [Codes of Practice](#)

The **CoP Compliance and Protocol Approval spreadsheet** can be found on the [Codes of Practice](#) page and the [Metering](#) page

For more information please contact the **BSC Service Desk** at bscservicedesk@cgi.com or call **0370 010 6950**.

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