

## Guidance Note

### Code of Practice 4 Sample Meter Calibrations

We've prepared this guidance to help Meter Operator Agents (MOAs) understand the obligations under the Balancing and Settlement Code (BSC) and Code of Practice 4 (CoP4) to perform sample Meter Calibrations.

#### Why do I have to carry out sample Meter Calibrations?

A BSC Party (Registrant) appoints you to install, commission, test, maintain, rectify faults and provide a sealing service on their behalf, for the Metering Equipment that is registered in Settlements as a Metering System. CoP4 sets out the requirements for calibrating, testing and Commissioning Metering Equipment for Settlement purposes. One of these requirements is to carry out sample Meter Calibrations.

#### Why calibrate a sample of Meters?

##### Periodic Calibrations

Under CoP4 you must periodically calibrate all Half-Hourly Meters to ensure they remain accurate for use in Settlement (see Section 5.1 of CoP4). CoP4 Appendix A sets out elapsed times for periodic Calibrations. These depend on which CoP the Meters are registered against. For example, if a Meter is installed to CoP1 you need to carry out the first periodic Calibration by year 5 (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 performance history and could become inaccurate before their periodic Calibration is due. This means that Calibration must happen 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 states that you must sample calibrate certain Meter Types, as specified by BSCCo. This Sample Meter Calibration list is contained within the CoP Compliance and Protocol Approval spreadsheet on the [Codes of Practice page](#) of the ELEXON website. These sample Calibrations need to happen a few years after the date of the individual Meter's initial Calibration (i.e. a Type A Calibration) and, for each year following that, for a total of



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five years. Appendix E, Form E2 (Meter Sampling Report) of CoP4 tells you the format in which you should provide the results of each year's sample Calibrations. You must send your results to [metering@elxon.co.uk](mailto:metering@elxon.co.uk) before the end of January the following year.

So, for example, a Sample Calibration carried out from January to December 2010 (i.e. 'Sample Calibration Year 2010') needs to be submitted to us before the end of January 2011. See Appendix 1 for an example Meter Sampling Report form (Form E2 of CoP4). This example form is based on the worked example at the end of this guidance.

We consolidate the sample Meter Calibrations results and take a paper to the relevant BSC Panel committees, i.e. the Imbalance Settlement Group (ISG) and the Supplier Volume Allocation Group (SVG). The reason for this is that the BSC Panel has delegated joint responsibility for CoP4 to the ISG and SVG.

## What is the requirement?

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

We identify the relevant Meter Types in November before the beginning of each Sample Calibration Year. We keep a Meter Type on the list for five years. Each year for that five year period you must 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?

There are a few steps that you need to go through to establish how many Meters of the relevant type you have to carry out sample Calibrations on:

1. Identify how many Meters of the relevant type(s) you are responsible for (if any).
2. Establish how many of them qualify (if any) for a sample Meter Calibration in the coming year. You can do this by listing all the Meters of relevant Meter Type(s) that you are responsible for and establishing which of them has a Type A Calibration date older than either two years (for CoP 1 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 01/01/2010 for Sample Calibration Year 2010) to find any relevant Meters with a Type A Calibration date older than two or eight years. The results you receive will initially qualify for the 2010 Sample Calibration Year.
3. Next, you must remove any individual Meters from this initial qualification list which have already been periodically calibrated or have been sample calibrated in a previous year.
4. You need to sample calibrate 2% of the number of Meters that you are left with on the list.

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## 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 about any outstanding report submissions for each year.

## What if I have less than 100 qualifying Meters?

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

For example, if you are responsible for 120 Meters of Meter Type X (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 2 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?

As part of your periodic Calibration programme, if you calibrate the required amount (2%) of relevant Meter Types that qualify for a sample Calibration, you don't 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). Repeat this data (for the required percentage of qualifying Meters only) in Form E2. In this case, the results for the Meters selected for Form E2 should be randomly selected for inclusion (i.e. not be biased by the results obtained during the Calibration).

## What Meter Types are specified for sample Calibrations?

We select either new Meter Types and/or Meter Types where it is evident that a particular Meter Type is not performing as expected. These Meters are listed in the Sample Meter Calibration list in the CoP Compliance and Protocol Approval spreadsheet which is published on the [Codes of Practice page](#) of our website.

### Example

Meter Type X and Y appear on the specified Meter Type list for a five year period. For the next Sample Calibration Year (2010) you need to 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, the next step is to identify the date of the Type A calibration for these 200 Meters. 2% of those with a Type A calibration date of more than two years old 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, you would schedule three Meters ( $150 \times 2\%$ ) to be sample calibrated in the upcoming Sample Calibration Year. This process is repeated for CoP3, 5, 6 and 7 for this Meter Type with a Type A Calibration date of more than eight years old. Repeat this process each year that Meter Type X appears on the Sample Meter Calibration list.

Remember that Meters that have already been sample calibrated, or have had a periodic Calibration should not be included in the number of Meters that meet the qualification criteria (i.e. Type A Calibration date greater than two or eight years).

Repeat the above process above with the remaining Meter Type identified (i.e. Meter Type Y).

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

Sample Calibration Year	2010	2010
Meter Type	X	Y
Total population of Meter Type you are 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 January 2008	150	40
No. of CoP3/5/6/7 Meters with a Type A calibration date of before 1 January 2002	0	0
2% of CoP1/2 Meters (>two years since Type A)	3 (2% of 150)	2 (2% of 40 = 0.8)
2% of CoP3/5/6/7 Meters (>eight years since Type A)	0	0
Total sample Calibrations for 2010 Meter Type	3	2

This worked example is represented in the example Meter Sampling Report form (Form E2 of CoP4) in Appendix 1. Blank copies of the [Meter Sampling Report forms](#) are published on the Code of Practice page of our website.

**E2 Meter Sampling Report for Calendar Year\_2010****Meter Operator Agent\_ABC Metering Ltd**

<b>Meter Make and Model</b>	<b>No of Meters in Service</b>	<b>Number of Meters Calibrated (Type B Cal)</b>	<b>Number of Meters Outside CoP4 limits<sup>1</sup></b>	<b>Number of Meters Adjusted</b>	<b>Comments<sup>2</sup></b>
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.

<sup>1</sup> For Meters that are found outside of CoP4 limits of error, please provide a copy of the Calibration report on a separate sheet.

<sup>2</sup> 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)