EMR Settlement

G1 – Capacity Market Metering

Public

EMRS Guidance
Version 21.0
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Contents

Change Amendment Record

Version	Date	Description
10.0	14 July 2021	Updated section 14 for new deadlines for Long Stop Date for Refurbishing CMUs and the Extended Long Stop Date
11.0	1 September 2021	References to Meter Operator Agent updated for Retail Energy Code in Section 5.1 and 15
12.0	20 December 2022	Housekeeping updates
13.0	29 July 2024	Updates to reflect the new metering processes within My EMRS as part of CP373.
14.0	20 August 2024	Updated to add references to the Capacity Market Metering Register.
15.0	16 September 2024	Adding hyperlinks to My EMRS Metering Functionality Training Videos
16.0	3 September 2025	Updates to reflect EMRS new visual identity Content updated to clarify Metering Configuration activities for Capacity Providers Updates to Tables 5 & 6 – Metering Deadlines
17.0	12 November 2025	Updates to Table 5 – Metering Assessment Deadlines
18.0	23 January 2026	Annual Review
19.0	3 February 2026	Updates to Table 5 – Metering Assessment Deadlines
20.0	31 March 2026	Updates to reflect Metering Statement guidance enhancements
21.0	19 May 2026	Updates to add references to D0357 set up email template in Section 9.2

1. Introduction

To be able to participate in the Capacity Market (CM) all Capacity Providers must have a Metering System installed that is compliant with the CM Regulations and Rules. This Metering System must form an Approved Metering Solution installed at such a point to measure the Metered Volume of the Capacity Market Unit (CMU).

The metering requirements in CM can vary depending on the individual configuration of the CMU. This can either be, metered as required under the Balancing and Settlement Code (BSC), relevant Balancing Services Agreement or the Technical Requirements for Bespoke Metering Configuration Solution.

A Capacity Market Metering Register is maintained by the CM Settlement Body, which records approved metering solutions and related information for each CMU and DSR Component Reallocation. The Register is publicly available on our website[1], with its content retained for a period of five years from receipt of data.

Please note we have produced some short training videos on the Metering Functionality within My EMRS that can be used in conjunction with this document.

2. Purpose

The purpose of this document is to answer the following questions:

- What are the allowed types of metering configuration?
- What are the Line Diagram requirements?
- What are the metering requirements for BSC CMUs?
- What are the metering requirements for existing Balancing Services?
- What are the metering requirements for a Bespoke Solution?
- What are the metering requirements for an Aggregating CMU?
- What are the test facility requirements?
- What is the Metering Test?
- What is the Site Audit?
- How do I submit my metering configurations?
- What if my metering arrangements change?

3. What are the allowed types of Metering Configuration?

In the Capacity Market there are four types of Metering Configuration Solution:

- Balancing Mechanism Unit (BMU) (BSC Metering),
- Supplier Settlement (Non-BMU) (BSC Metering),
- Balancing Services; and
- Bespoke.

The Metering Configuration solutions are approved by the Electricity Settlements Company (ESC); the CM Settlement Body.

These metering configuration solutions can be used to determine Metered Volumes for Generating Units, Interconnectors or Demand Side Response (DSR) CMUs. In DSR the method of demand reduction can be by switching out (turning off) certain circuits at the site or by permitted on-site generation[2] (e.g. using a diesel generator).

Where there is one Generating Unit CMU component it must have a Metering System that is capable of measuring the Net Output of that Generating Unit. Where there is more than one Generating Unit behind a single Meter Point Metering System then that Metering System must be capable of measuring the Net Output of all the Generating Units making up the CMU at that location. The Net Output is the gross generation less the demand used by the Generating Unit to produce that generated electricity (the Auxiliary Load). The Auxiliary Load is the demand directly used by the Generating Unit during its operation and is the minimum that must be netted off gross generation.

[1] [1] Please select the 'Capacity Market Metering Register' option on this webpage: https://www.emrsettlement.co.uk/settlement-data/settlement-data-capacity-providers/

[2] Capacity Providers should check that generation is allowed to provide DSR Capacity Obligations.

It is up to the Capacity Provider to decide if other demand is connected before the CMU Meter Point. The Capacity Provider can install more metering to measure only the Auxiliary Load to increase the Metered Volumes of the CMU but this would make the Metering System Bespoke.

Each Interconnector CMU must have a Metering System that is capable of measuring the amount of electricity transmitted through the CMU into the GB Transmission System.

Each DSR CMU Component must have a Metering System that is capable of measuring the import or export of electricity to or from that DSR CMU Component.

We have produced a short training video on how to submit Metering Configurations in My EMRS which can be used in conjunction with this document.

4. What are the Single Line Diagram requirements?

The Single Line Diagram (SLD) is a single line electrical schematic diagram that should show the CMU electrical configuration and the CMU Metering System. All CMU components at a site should be shown on the diagram. The diagram should show all connections to the Total System (or Unlicensed Network, or site containing the CMU, as applicable) and any other connection to the CMU from within the site.

The SLD must include all metered circuits that are making up the CMU or CMU Component. Where non-settlement Boundary Point metering is being used (i.e. Bespoke or Balancing Services Metering Configuration Solutions) the Boundary Point to the Total System (i.e. the Transmission System or Distribution System, as applicable) should be shown.

The Meter Point(s) should be clearly identified and the Generating Unit / circuit to have demand reduced should be clearly marked.

Where the CMU is using a generator, including DSR permitted onsite generation, the rating of the generator should be provided.

An example of an SLD for a CMU using a Bespoke Metering Configuration Solution is shown in Diagram 1.

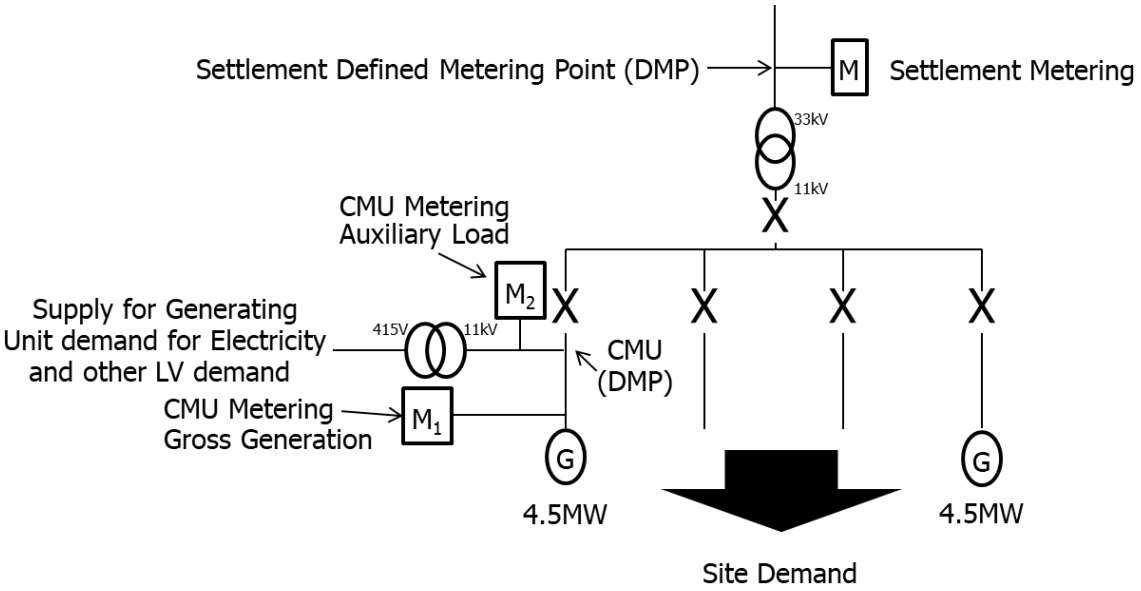

Diagram 1: Single Line Diagram for a Bespoke Metered CMU.

A copy of the SLD is submitted on My EMRS as part of the Metering Test, if your Metering Assessment submission has shown that a Metering Test is required.

A Capacity Provider can submit an electrical schematic diagram to provide the details for the Measurement Transformer connections and their orientation for power flow. An example of this can be seen in Diagram 2.

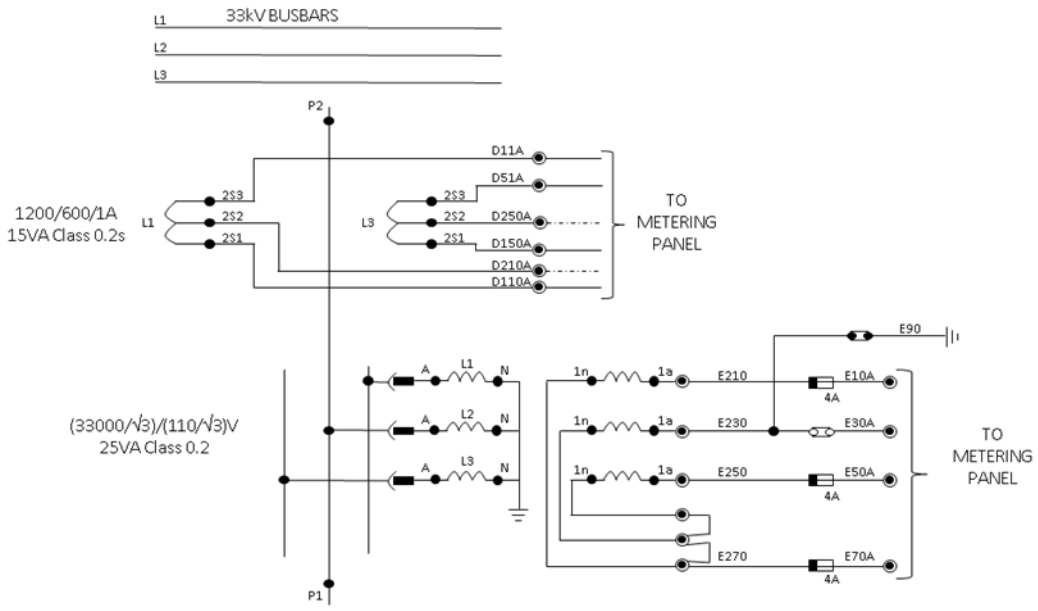

Diagram 2: Electrical Schematic Diagram for a Bespoke Metered CMU.

5. What are the Metering Requirements for BSC CMUs?

5.1. Metering Requirements

For any Capacity Provider, whether Generator, Interconnector or DSR, that is using a Metering System registered in Central Meter Registration Service (CMRS) or Supplier Meter Registration Service (SMRS), the metering will meet the requirements as specified in the BSC[3] Section L, the Retail Energy Code[4] Metering Operations Schedule and the applicable Code of Practice[5] (CoP), depending on the capacity of the circuit. The obligations for calibration, testing and commissioning are in CoP 4.

A BSC-registered Capacity Provider using their Settlement Metering System as the CMU Metering Equipment will have a metering arrangement compliant with the applicable CoP at the time of registration for Settlement.

Only if there has been a significant material change at a CoP1 or CoP2 site (e.g. replacement of switchgear containing Instrument Transformers) is the site required to upgrade to the requirements of the current CoP.

All Metered Volumes will be adjusted to the Transmission System Boundary. For any CMU that is registered for Settlement purposes in SMRS, Line Loss Factors (LLF) will be applied.

When the Meter reaches the end of its service it should be replaced with a Meter of an accuracy class meeting the requirements of the current CoP at the time of the change.

A Capacity Provider can choose to exceed these requirements to install a more robust and accurate Metering System. For example, by installing a Meter of a better accuracy class than the specified minimum.

Should the generating station have Station Transformers that are directly used in the generating process for a number of Generating Units that are separate BMUs the demand used by them must be apportioned between each of the BMUs. The example below, Diagram 3, assumes that each Generating Unit is identical and the Station Transformer Demand can be split equally:

[3] https://bscdocs.elexon.co.uk/bsc/bsc-section-l-metering
[4] https://recportal.co.uk/web/guest/rec-wiki-final/-/wiki/50864/REC+Schedule+14+%E2%80%93+Metering+Operations
[5] https://bscdocs.elexon.co.uk/codes-of-practice

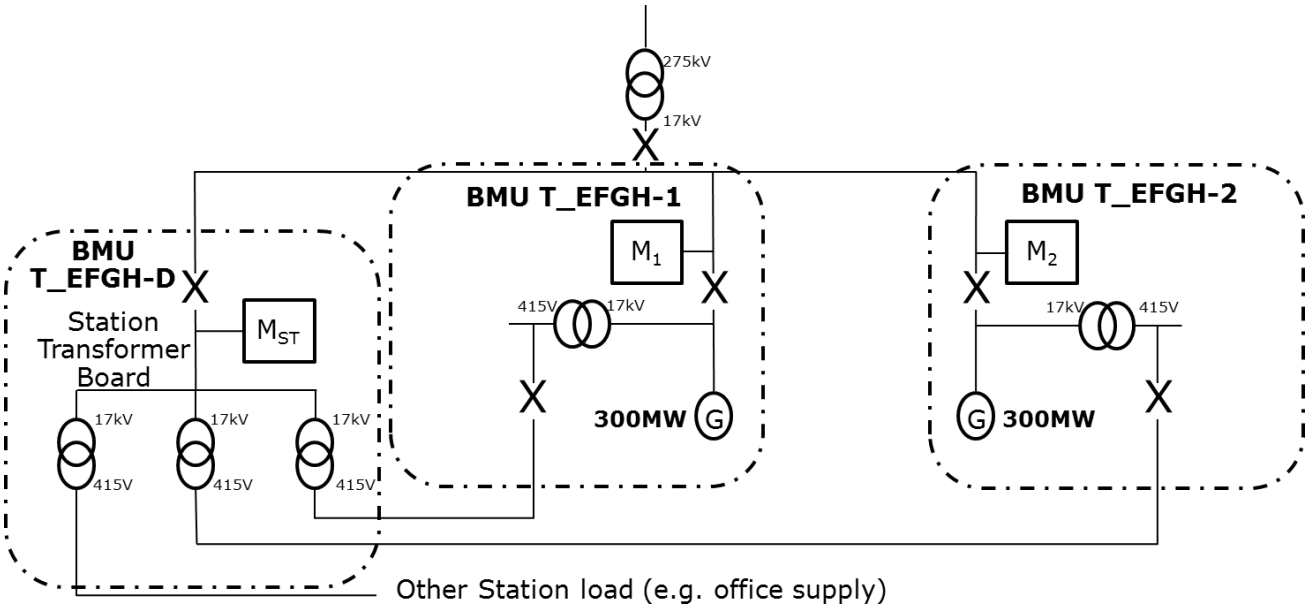

Diagram 3: Shared Auxiliary Load.

In the example in Diagram 3 the Generating Units are identical and rated at 300MW, should the Generating Units not be identical the demand will be split according to the rated capacity of each Generating Unit.

$$\text{Apportioned Station Transformer Multiplication Factor (CMU1)} = \frac{A}{C}$$

$$\text{Apportioned Station Transformer Multiplication Factor (CMU2)} = \frac{B}{C}$$

Where:

A is the rated output (MW) of the Generating Unit involved in CM as CMU1 (T_EFGH-1);

B is the rated output (MW) of the Generating Unit involved in CM as CMU2 (T_EFGH-2); and

C is the aggregate rated output (MW) of all Generating Units comprising the Generating Station.

Therefore the metering configuration for each CMU would be:

CMU1 Metered Volume= $(AE(M_1) - AI(M_1)) – (0.5 \times AI(M_{ST}))$

CMU2 Metered Volume= $(AE(M_2) - AI(M_2)) – (0.5 \times AI(M_{ST}))$

If one Generating Unit involved has a rated output of 300MW and the other Generating Unit has a rated output of 100MW then the apportioned Station Transformer multiplication factor would be 0.75 for the 300MW Generating Unit and 0.25 for the other Generating Unit.

5.2. Metering Faults

Should any of the Metering Equipment become defective, the Capacity Provider is responsible for informing EMRS within two Working Days. The fault should be repaired as soon as reasonably practicable and ideally within five Working Days, or a rectification plan outlining how and when the fault will be rectified should be submitted within five Working Days. This is as per Rule 8.3.3 (f) (v) of the Capacity Market Rules[6].

[6] Capacity Market Rules available on the Ofgem website https://www.gov.uk/government/publications/capacity-market-rules

Where individual items of Metering Equipment are to be replaced, then only those items need to be commissioned at that time. Metering Systems in their entirety do not need to be commissioned when items are replaced within that system unless there is a material change to a CoP1 or CoP2 Metering System.

A material change to a Metering System would be a change to:

Switchgear containing Instrument Transformers; and/or

The primary plant associated with the Metering System, i.e. Instrument Transformers.

A material change to a Metering System would result in the need to ensure that all items of Metering Equipment comprising that CoP1 or CoP2 Metering System are compliant with the latest version of the applicable CoP.

Any Metering Configuration or Equipment changes will require a Change Request to be raised, using My EMRS. We have produced a short training video on raising Change Requests in My EMRS which can be used in conjunction with this document.

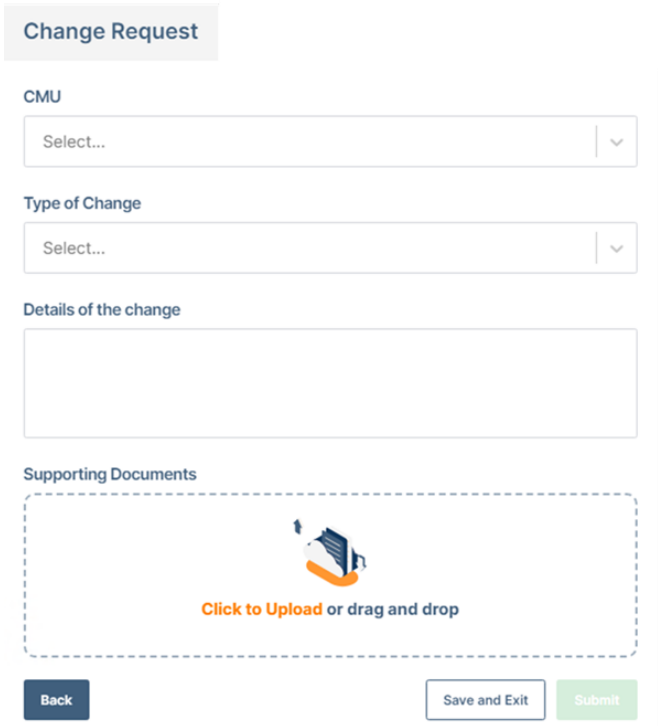

Diagram 4: My EMRS Change Request submission

5.3. Non-BSC Metering

All CMU components are required to be metered by a Half Hourly Meter (or a Metering System that is half hourly, e.g. a Meter pulsing to an Outstation that converts to half hourly Settlement Periods), unless in some instances they are existing Balancing Services customers. These instances are covered in Section 6.

A CMU operating on an Unlicensed Network or a DSR CMU may require additional metering (Bespoke Solution) behind the Boundary Point Meter to demonstrate their Capacity Obligation. These instances are covered in Section 7.

Any situation falling outside the BSC will be covered by the relevant Balancing Services Agreement or Bespoke Technical Requirements; these include splitting out circuits from existing BMUs and difference metering. These instances are covered in Sections 6 and 7, as applicable.

6. What are the Metering Requirements for existing Balancing Services?

6.1. Metering Requirements

In a Balancing Services site, one of the requirements of the provision of DSR is to provide real time data to the National Energy System Operator (NESO). This is not necessarily done through a Half Hourly Meter and may be by another type of measuring device.

A Balancing Services site can use a metering device that is capable of providing adequate metering signals for the requirements of NESO. This could be a transducer, SCADA interface, analogue meter, pulsing Meter or Half Hourly Meter.

For this type of installation, the Metering System has to meet the accuracy requirements specified in the relevant Balancing Services Agreement. The applicable contracts in CM are: Short Term Operating Reserve (STOR), Frequency Control by Demand Management (FCDM) and Firm Frequency Response (FFR).

6.2. Meter Data Requirements

Where a Half Hourly Meter is not used in the Metering System for the provision of DSR the output must be collated and converted into energy (multiples of Wh) and Settlement Period (48 periods of 30-minute duration per day; clock change days 46 or 50 periods, as applicable) format. The method for submitting data to EMRS[7] is described in the WP195 - Capacity Market and Contracts for Difference Metered Data[8].

6.3. Adjustment for Losses

For sites containing the CMU that are connected to a Distribution System the Metered Volumes will be adjusted for line losses by an LLF. LLF shall be applied by EMRS from the Distribution System connection point of the site or Unlicensed Network containing the CMU to the Transmission System Boundary.

Should the CMU be part of a Third Party Access site the electrical losses from the Unlicensed Network connection point of the Third Party Access site to the Boundary Point of the Unlicensed Network to the Total System should be calculated by the Unlicensed Network Operator using an approved methodology where they are to be applied. Where applicable, this calculation of losses will have been validated through the Metering Dispensation (BSCP32[9]) process that all Third Party Access sites are subject to.

The Capacity Provider must have a copy of the electrical losses methodology statement from the Unlicensed Network Operator if electrical losses for the Unlicensed Network have been applied.

This will be in addition to the LLF for the Distribution System the Unlicensed Network is connected.

6.4. Metering Faults

Should any of the Metering Equipment become defective the Capacity Provider is responsible for informing EMRS within two Working Days. The fault repaired as soon as reasonably practicable and ideally within five Working Days, or a rectification plan outlining how and when the fault will be rectified should be submitted within five Working Days. This is as per Rule 8.3.3 (f) (v) of the Capacity Market Rules.

7. What are the Metering Requirements for a Bespoke Solution?

A Bespoke Solution is required for any of the following situations:

- Splitting Balancing Mechanism Units (BMUs);
- Difference Metering; and

[7] Performing the Settlement Services Provider role on behalf of the Settlement Body (ESC)
[8] https://emrsettlement.co.uk/publications/working-practices/
[9] https://bscdocs.elexon.co.uk/bsc-procedures/bscp-32-metering-dispensations

- Additional Metering (not used in BSC Settlement).

7.1. Splitting BMUs

The purpose of splitting BMUs[10] is to get individual Metered Volumes for a particular Generating Unit. In the BSC Metering configuration for the existing BMU multiple Generating Units have been aggregated but only a number of them are to be used in CM.

If the BMU is split into smaller BMUs then they will still be part of the BSC and Section 5 would still apply.

If splitting BMUs have a Metered Volume Reallocation Notification (MVRN) in place this will need to be set up for the new BMUs in addition to registering the new BMUs (BSCP15 - BM Unit Registration[11]).

This section (7.1) would only apply where the BMU remains the same and Metered Volumes from individual circuits are submitted to EMRS for Settlement in CM.

An example of splitting an existing BMU is illustrated in the simplified SLD example shown in Diagram 4:

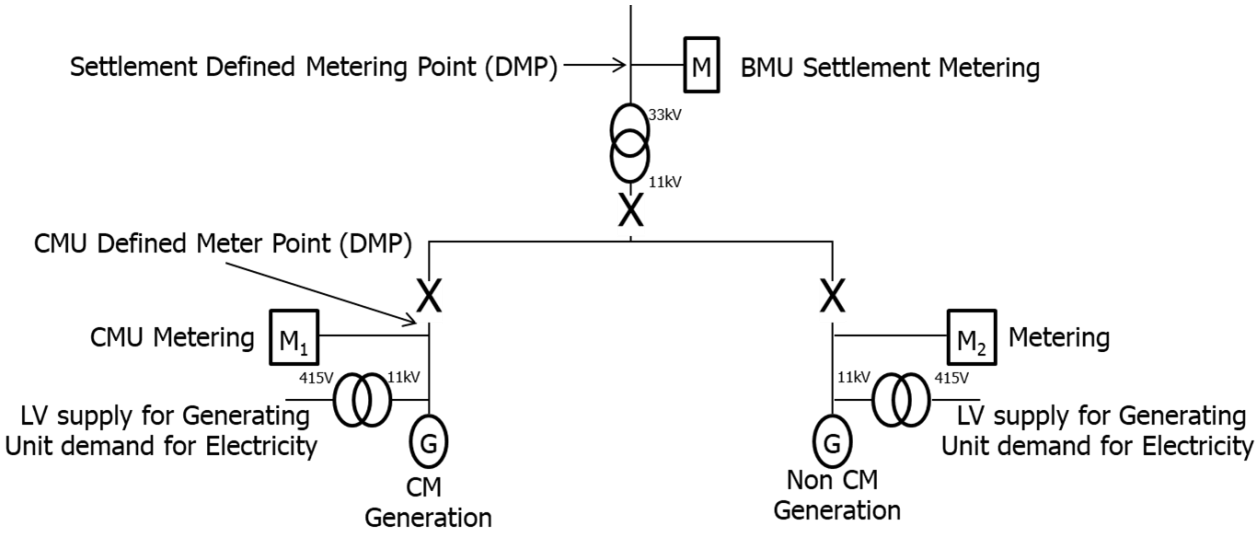

Diagram 5 Individual Circuit with a BMU submitted to the Capacity Market.

Each Generating Unit is metered individually using CoP compliant Metering Equipment and the BMU has been configured to give the net Metered Volume for the whole generating station.

Net Metered Volume = AE(M) – AI(M)

Where AE is Active Export and AI is Active Import.

The Generating Unit associated with Meter M_1 is the only one required for CM. The CMU would have to be configured so that the CMU Generating Unit Metered Volumes to be used in CM Settlement are separated from the BMU.

CMU Metered Volume = AE(M_1) – AI(M_1)

As the Generating Units are already metered the Metering System would still be part of the BSC and not be Bespoke. Separating out part of the BMU Metered Volumes would result in data being submitted through a Bespoke path, i.e. CSV File sent via SFTP. The Metering Configuration Solution would be Bespoke but the Metering System should be compliant with the BSC and it would be against the BSC that the Metering System would be tested against. The only additional part of the Metering Test would be on data submission, i.e. the Bespoke path.

A CSV File would have to be submitted as part of the commissioning evidence along with independent confirmation of the Metered Volumes contained within.

[10] Not applicable to Additional BMUs
[11] https://bscdocs.elexon.co.uk/bsc-procedures/bscp-15-bm-unit-registration

7.2. Difference Metering

The purpose of difference metering is to get individual Metered Volumes for a particular Generating Unit that has no metering by deriving it from other metering sources. The BSC Settlement Meter at the Boundary Point will give the net Metered Volume for the site. To get the Metered Volume for an unmetered generating unit the net Metered Volume from the other metered Generating Units will be subtracted from the net Metered Volume at the Boundary Point.

The differencing arrangement can also be used where anything ineligible is behind a Meter Point in the Capacity Market, where ineligible demand/generation is anything that is part of another CMU or a Generating Unit that is in receipt of a low carbon subsidy.

An example of difference metering is illustrated in the simplified SLD example shown in Diagram 5:

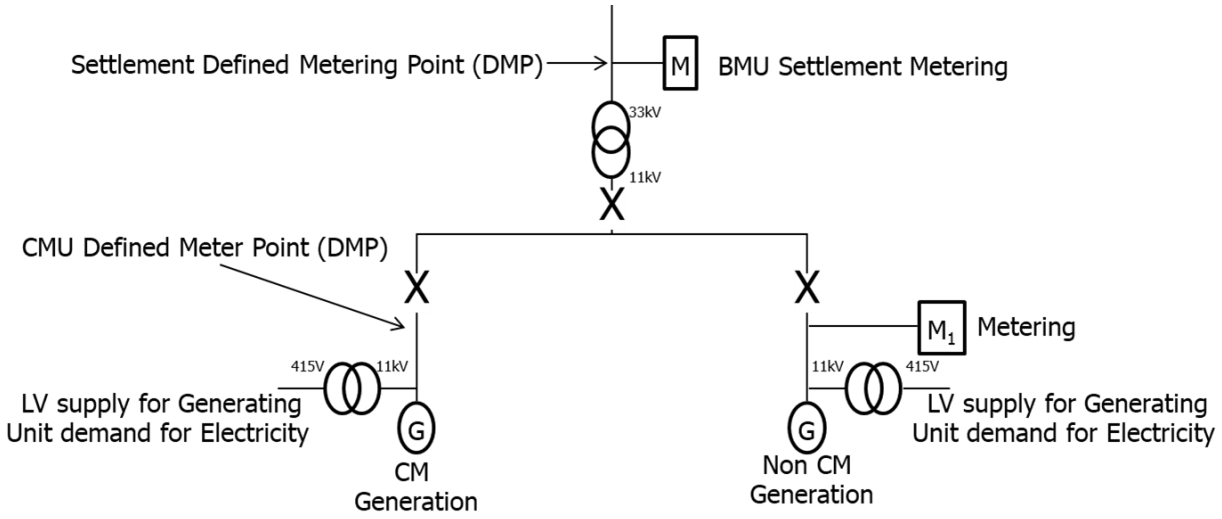

Diagram 6 Determining CMU Metered Volume for Capacity Market by Difference Metering.

The owner of the site has two Generating Units and only one of them is to be involved in CM. The Generating Unit in CM is not metered but the other Generating Unit at the site is metered.

The CMU net Metered Volume is derived by subtracting the net Metered Volume of the other (non CMU) Generating Unit from the net Metered Volumes recorded by the BMU settlement meter.

CMU Metered Volume = (AE(M) - AI(M)) – (AE(M_1) - AI(M_1))

Should the generating station have Station Transformers that are directly used in the generating process the demand used by the Generating Unit involved in CM must be apportioned to that Generating Unit.

Again, as described in Section 5.1, the EMR metering configuration used to determine net Metered Volume for the Generating Unit in CM must account for any Station Transformer load used by the CMU.

7.3. Additional Metering

7.3.1 Metering Requirements

Where additional metering has been installed behind the existing BSC Metering at the Boundary Point to demonstrate compliance in CM it must meet the Bespoke Technical Requirements[12] specified in Schedule 7 of the CM Rules[13] as a minimum.

This is for any site where the Defined Meter Point (DMP) of the CMU component is not at the Boundary Point to the Total System (Defined Metering Point as specified in the relevant CoP) or when operating on an Unlicensed Network. In the latter case the connection point (Meter Point) would be the connection of the CMU component to the Unlicensed Network.

[12] Unless a Balancing Services Metering Configuration Solution is being used and Section 6 would apply
[13] Capacity Market Rules available on the Ofgem website https://www.gov.uk/government/publications/capacity-market-rules

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The Bespoke Technical Requirements detail the minimum specification that the Metering Equipment requires to be and the testing and commissioning requirements.

A Capacity Provider can choose to exceed these requirements to install a more robust and accurate metering system. For example, by installing a meter of a better accuracy class than the specified minimum.

For a Bespoke Solution site the Capacity Provider is responsible for completing a Key Meter Technical Details form and submitting it as part of the Metering Test[14] process (see example in Appendix 1). We have produced a short training video on submitting Metering Tests in My EMRS.

An example of a CMU using a Bespoke Metering Configuration Solution can be seen in the SLD in Diagram 6.

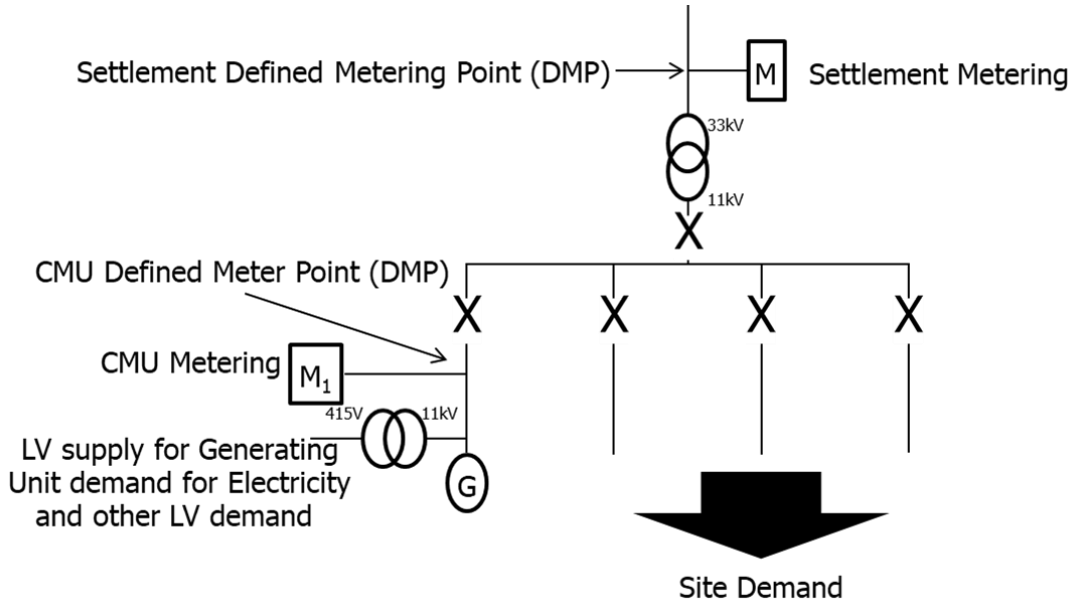

Diagram 7 Bespoke Metering Configuration Solution example.

In this example, a Generating Unit is on an Unlicensed Network and the Metered Volumes for the Capacity Obligation are recorded by Meter, M_1 (if the Metering System was Type 1, 2 or 3 then a Main and Check Meter will be required). This Metering System would have to be compliant with the Bespoke Technical Requirements.

The Metered Volume of the CMU can be derived by using multiple meters. This is illustrated in the simplified SLD in Diagram 7.

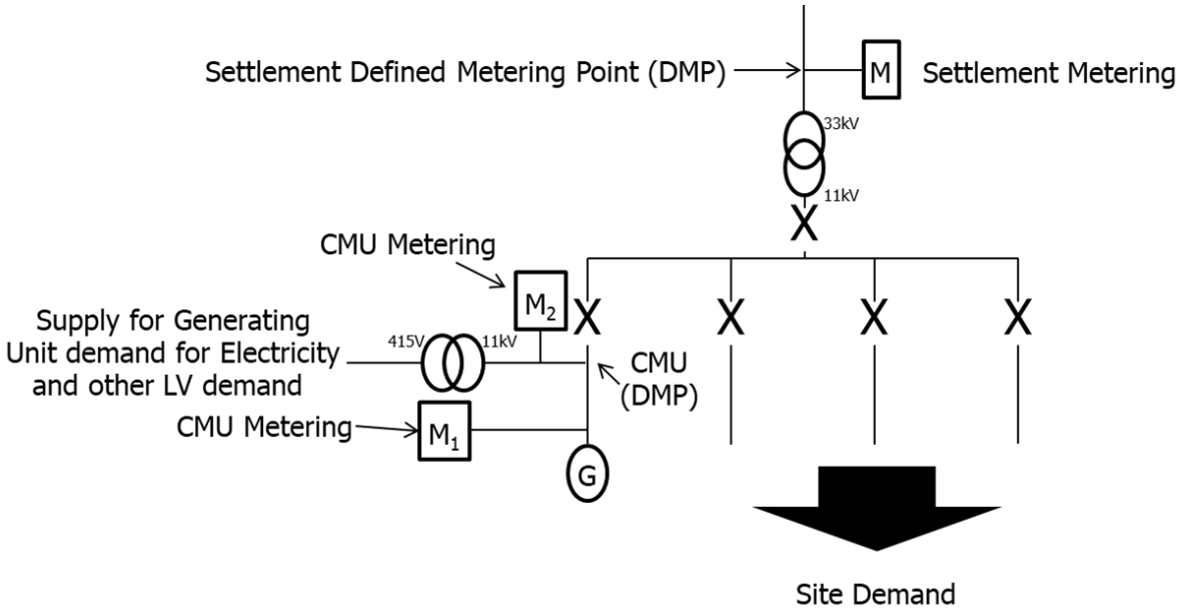

Diagram 8 Multiple Metering Systems to derive Net Output.

[14] See WP197 - Capacity Market Metering Test https://emrsettlement.co.uk/publications/working-practices/

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In this example the gross generation of the Generating Unit is measured independently from the parasitic (Auxiliary Load) and other site load. From these meters the Metered Volume of the CMU can be derived:

Metered Volume = Gross Generation - (Auxiliary Load)

Metered Volume = $AE(M_1) – AI(M_2)$

This would form part of the metering configuration for the CMU.

For a Bespoke site operating on an Unlicensed Network the Capacity Provider is responsible for the Meter commissioning and proving tests. This is discussed in Section 8. The Capacity Provider will, while they have a Capacity Agreement, carry out maintenance checks to verify the Meter Technical Details and that the Metering System is recording the correct amount of energy. These occur every three years from year four of the metering system installation date.

7.3.2 Metering Equipment

Any Capacity Provider can choose to exceed the requirements specified in the Bespoke Technical Requirements and install a more robust and accurate Metering System; for example, by installing a Meter of a better accuracy class than the specified minimum.

The requirements are split into four Metering Types based on the rated capacity of the circuit or the maximum demand:

- Metering Type 1 - for circuits rated greater than 100MVA;
- Metering Type 2 - for circuits rated up to 100MVA and rated greater than 10VA;
- Metering Type 3 - for circuits rated up to 10MVA; and
- Metering Type 4 – for circuits with a maximum demand up to 1MW.

It will depend on what Metering Type category a Metering System falls into as to what Metering Equipment will have to be installed and what limit of Overall Accuracy will be applicable. The Metering Type to be used is based on each metered circuit and not the aggregated capacity for a Component. This means you could have a Metering System for a Generating Unit that has a rated circuit capacity of 15MVA and this would be Type 2 but an Auxiliary Load circuit with a maximum demand of 500kW which would be Type 4.

The requirements for CTs can be seen in Table 1. All CTs should be manufactured to the current IEC standard (Instrument transformers - Part 2: Additional requirements for current transformers) at the time of installation.

Table 1: *Current Transformers.*

Metering Type	Minimum Accuracy Class	Configuration Requirements
1	0.2s	One set of CTs for the Main Meter and a second set for the Check Meter (per circuit)
2	0.2s	One set of CTs for the Main and Check Meters (per circuit)
3	0.5	One set of CTs for the Main and Check Meters (per circuit)
4	0.5	One set of CTs for the Main Meter (per circuit)

The requirements for VTs can be seen in Table 2. All VTs should be manufactured to the current IEC standard (Instrument transformers - Part 3: Additional requirements for inductive voltage transformers) at the time of installation.

Table 2: *Voltage Transformers.*

Metering Type	Minimum Accuracy Class	Configuration Requirements
1	0.2	One set of VTs, or dedicated secondary winding for the Main Meter and a second set, or separate secondary winding, for the Check Meter (per circuit)
2	0.5	One set of VTs, or dedicated secondary winding for the Main and Check Meters (per circuit)
3	1.0	One set of VTs for the Main and Check Meters (per circuit)
4	1.0	One set of VTs for the Main Meter (per circuit)

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The requirements for Meters can be seen in Table 3. All Meters should be manufactured to the current IEC standard (62053-## series) at the time of installation. It is recommended to use a Meter that has been approved under the BSC for Half-Hourly Settlement for the equivalent CoP as this meets all the requirements of the Bespoke Technical Requirements.

Where:

- Metering Type 1 is equivalent to CoP1,
- Metering Type 2 is equivalent to CoP2,
- Metering Type 3 is equivalent to CoP3, and
- Metering Type 4 is equivalent to CoP5.

The CoP Compliance and Protocol Approval List[15] can be found on the Elexon website. The Compliance section of the list has separate columns for CoP1, CoP2, CoP3 and CoP5 that confirm whether a Meter Type is approved for that CoP.

Table 3: *Meters.*

Metering Type	Minimum Accuracy Class	Configuration Requirements
1	0.2s	Main and Check Meter required (per circuit)
2	0.5s	Main and Check Meter required (per circuit)
3	1.0	Main and Check Meter required (per circuit)
4	2.0	Main Meter required (per circuit)

Where the Meter has been approved under the Measurements Instrument Directive (MID) the relevant standard is EN 50470-3 where Class C is equivalent to Class 0.5s, Class B is equivalent to Class 1.0 and Class A is equivalent to Class 2.0. It should be noted that there is no MID equivalent to a Class 0.2s Meter required under Metering Type 1.

In addition to the individual equipment requirements for accuracy, the Metering System in its entirety must be within the Overall Accuracy limits, as specified in Table 4. Therefore the combined error of the Meter, CT and VT must be within the allowed limits for Overall Accuracy, it is possible to compensate the Meter for the Measurement Transformer (i.e. CT and VT) errors to bring the Overall Accuracy within the allowed limits.

Table 4: *Overall Accuracy Limits.*

Metering Type	Condition	Limits of error at stated system power factor	
	Current expressed as a % of Rated Measuring Current	Power Factor	Limits of Error
1	120% to 10% inclusive	1	±0.5%
	Below 10% to 5%	1	±0.7%
	Below 5% to 1%	1	±1.5%
	120% to 10% inclusive	0.5 lag and 0.8 lead	±1.0%
2	120% to 10% inclusive	1	±1.0%
	Below 10% to 5%	1	±1.5%
	Below 5% to 1%	1	±2.5%
	120% to 10% inclusive	0.5 lag and 0.8 lead	±2.0%
3	120% to 10% inclusive	1	±1.5%
	Below 10% to 5%	1	±2.0%
	120% to 10% inclusive	0.5 lag and 0.8 lead	±2.5%
4	100% to 20% inclusive	1	±1.5%
	Below 20% to 5%	1	±2.5%
	100% to 20% inclusive	0.5 lag and 0.8 lead	±2.5%

[15] Location of the CoP Compliance and Protocol Approval List - https://www.elexon.co.uk/bsc-and-codes/codes-practice-compliance-protocol-approvals/

8. Metering System Commissioning

The purpose of the commissioning section is to provide sufficient evidence to prove that the Metering System, in its entirety, is configured correctly and has been tested to prove that the Metering System can correctly measure the primary energy of a circuit that is used to determine the output of a CMU or CMU Component.

The evidence to be provided for commissioning is in two parts:

- The Measurement Transformers (Current Transformers and Voltage Transformers); where the Meter is connected to a Measurement Transformer; and
- The Meters.

Where the Meters are direct connected or whole current the Meter itself can measure primary values without the need of Measurement Transformers. In these instances, only commissioning evidence for the Meters is required.

8.1. Measurement Transformers

When the Metering System was initially installed it should have had primary injection testing performed on the Measurement Transformers, sometimes referred to as a ratio and polarity test. It is an option to use prevailing load to commission the CTs where the circuit is energised. The preferred option is to complete primary injection tests.

Suitable evidence for the original primary injection test must include:

i The serial numbers, ratios, accuracy class and rated burden of all Measurement Transformers,
ii An electrical schematic showing the Measurement Transformers, clearly showing orientation with respect to the direction of incoming power flow and the ferrule numbers of secondary wiring,
iii The primary value of current injected through the CT and the measured secondary current,
iv Evidence of the CT polarity test (direction test) that clearly shows the direction the CT is facing (i.e. is P1 of the CT facing the incoming supply and P2 facing the source of the CMU Capacity Obligation (generator or demand reduction)),
v The primary value of voltage injected into the VT and the measured secondary voltage,
vi Evidence of the VT polarity test (direction test) that clearly shows the direction the VT is facing.

Where the Measurement Transformer is multi-ratio type, evidence must be provided to confirm what ratio the metering has been connected to. For example, this could be a ratio and polarity test where the secondary measurements have been taken at the metering panel for the ratios selected or a photograph of the terminal connections clearly showing what ratio the meter has been connected across (i.e. connected across high ferrule numbers indicates low ratio selected; connected across low ferrule numbers indicates high ratio selected). Referring to Diagram 2 (Section 4) the Meter is connected to 2S3 and 2S1 so this is set to the 1200/1A ratio.

8.2. Meters

The purpose of the Meter commissioning test is to provide sufficient evidence to prove that the Meter is configured correctly and has been tested to prove that the Meter can correctly measure the primary energy of a circuit that is used to determine the output of a CMU; and that it can be transmitted accurately to EMRS.

The evidence to be provided for commissioning of the meters is in two parts:

- The Meter Commissioning; and
- The Meter Proving Test.

It is recommended to complete the commissioning and proving tests at the same time so the prevailing load can be compared with the Half Hourly data. The commissioning test results should be date and time stamped to enable this.

Meter Commissioning

The Meter commissioning is to prove that the Meter has been configured correctly and is measuring the primary energy flowing through the circuit. It is expected that where a Meter is measuring a generation circuit this will be recorded by

the Meter as export (i.e. on an export cumulative register and the export Half Hourly channel) and where a Meter is measuring a demand circuit this will be recorded by the Meter as import (i.e. on an import cumulative register and the import Half Hourly channel).

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Where the Meters are direct connected or whole current, the Meter itself can measure primary values without the need of Measurement Transformers. In these instances, only commissioning evidence for the Meters is required.

Typical techniques to demonstrate Meter commissioning in a HV CT or CT meter are:

- Confirmation that there are no alarms on the Meter.
    - Download using the manufacturer's software; **OR**
    - Recorded on commissioning results.
- Confirmation the Measurement Transformer ratios have been applied correctly (i.e. measure secondary current/voltage and compare with Meter primary values) and confirmation that the Meter is recording the power flow in the correct direction (i.e. prevailing primary power import flow is recorded as Active Import on the Meter or prevailing primary power export flow is recorded as Active Export on the meter).
- An error check of the Meter using a suitably calibrated test instrument as a reference,
- Measurement or estimation of the burden (in VA) connected to the secondary side of the Measurement Transformers.8.

Commissioning tests should be completed on all Meters; this includes both the Main and Check Meters on the same circuit.

Where the Meter is direct connected or whole current there are no programmed Measurement Transformer ratios to be proved.

Meter Proving Test

The Meter proving test is to prove that the Half Hourly data recorded by the Meter can be received and matches the Half Hourly data submitted for Settlement to EMRS. In the case of a non-Settlement Meter this method can either be a data collector appointed by the Capacity Provider; or the Capacity Provider themselves if they collect the data. ESC recommends that a data collector is used to download the Meters.

Where data is submitted through a non-BSC process, i.e. a CSV file submitted over Secure File Transfer Protocol (SFTP), this file has to be provided as part of the proving test evidence. As mentioned previously, this should be completed at the same time as the Meter commissioning tests so the prevailing load can be compared with the Half Hourly data. More information on the CSV file can be found in Section 9.

Typical techniques to demonstrate Meter proving are:

- Confirmation that a Half-Hour period submitted is what the Meter has actually measured
    - Provide a cumulative energy register reading (active import or export, as applicable) at the start and end of a Half Hour period that the advance can be used to confirm the volumes in the Half Hourly data for the same period and the Half Hourly data for the day (in a CSV file if applicable)), **OR**
    - Provide a day's Half Hourly data (active import or export, as applicable) downloaded using the Meter manufacturer's software that can be used to confirm the volumes in the Half Hourly data submitted (from data collector or CSV file) to EMRS for the same period (for whole day).

9. Meter Data Submission

9.1. CMRS

EMRS receive all BMU data and the Capacity Provider does not have to take any action to set up the data submission process.

9.2. SMRS

The Capacity Provider must instruct the Supplier(s) for the relevant MPAN(s) that the MPAN(s) is involved in the Capacity Market. There can be different Suppliers for Active Import and Active Export MPANs. Appendix 10 of WP195

– CM and CfD Metered Data[16] contains a D0357 Set Up email template that Capacity Providers can use when contacting Suppliers.

The Supplier will instruct the Half Hourly Data Aggregator (HHDA) to send D0357 flows of Metered Volumes to EMRS. We recommend that you check with EMRS, via the Service Desk (contact@emrsettlement.co.uk) that the D0357 flow is being received.

9.3. Non-BSC – CSV

For a non-Settlement submission method, data has to be submitted in a defined CSV file format submitted via SFTP. The Capacity Provider will have to request an SFTP account by requesting one from the Service Desk (contact@emrsettlement.co.uk). EMRS will provide a username and password.

More information on the CSV file can be found in WP195 – Capacity Market and CfD Metered Data[16].

The basic format of the CSV will look as follows:

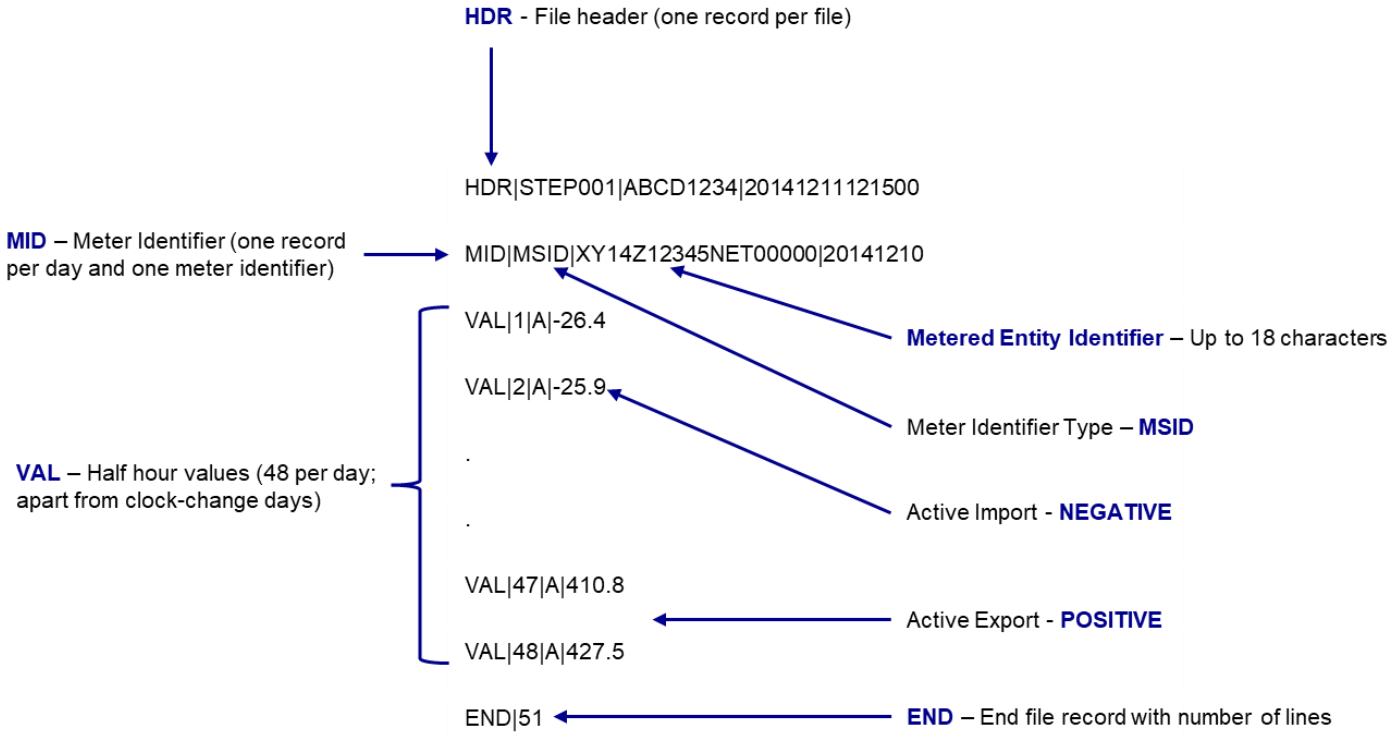

Diagram 8

The EMR Party ID will be agreed with EMRS as part of the Capacity Provider Registration process described in WP22 – Applicant & Capacity Provider Registration[16].

The Metered Entity Identifier (MEID) should be something unique to identify the Metering System (i.e. the circuit that the Metering System is measuring). The MEID should match that submitted in the CSV file submitted as part of the Metering Statement for the Metering Test.

The requirement to submit data is following a Stress Event, for DSR Tests, Satisfactory Performance Days and Site Audits. ESC recommends having a process in place to submit data on a regular basis, e.g. weekly.

In the case of a Stress Event, data must be submitted no later than 9 Working Days after the end of the month in which the Stress Event occurs.

Where main and check Meters have been installed, the half hourly data of the two Meters will be compared. It is the responsibility of the Capacity Provider to perform the comparison check. Any discrepancy between the two Meters

[16] https://www.emrsettlement.co.uk/publications/working-practices/

greater than 1.5 times the relevant accuracy requirements at the DMP will be investigated. Allowance shall be made for instances of low load.

10. Adjustment for Losses

For sites containing the CMU that are connected to a Distribution System the Metered Volumes will be adjusted for LLF. LLF shall be applied by EMRS from the Distribution System connection point of the site or Unlicensed Network containing the CMU to the Transmission System Boundary.

Should the CMU be part of a Third Party Access site the electrical losses from the Unlicensed Network connection point of the Third Party Access site to the Boundary Point of the Unlicensed Network to the Total System should be calculated by the Unlicensed Network Operator using an approved methodology, where these are to be applied.

The Capacity Provider must have a copy of the electrical losses methodology statement from the Unlicensed Network Operator if electrical losses for the Unlicensed Network have been applied.

This will be in addition to the LLF for the Distribution System the Unlicensed Network is connected to.

11. Metering Faults

Should any of the Metering Equipment become defective the Capacity Provider is responsible for informing the EMRS within two Working Days. The fault should be repaired as soon as reasonably practicable and ideally within five Working Days, or a rectification plan outlining how and when the fault will be rectified should be submitted within five Working Days. This is as per Rule 8.3.3 (f) (v) of the Capacity Market Rules.

Where individual items of Metering Equipment are to be replaced, then only those items need to be commissioned at that time. Metering Systems in their entirety do not need to be commissioned when items are replaced within that system unless there is a material change to the Metering System.

A material change to a Metering System would be a change to:

- Switchgear containing Instrument Transformers; and/or
- The primary plant associated with the Metering System, i.e. Instrument Transformers.

A material change to a Metering System would result in the need to ensure that all items of Metering Equipment comprising that Metering System are compliant with the latest version of the Bespoke Technical Requirements. A Capacity Provider can raise a Metering Configuration or Metering Equipment Change Request on My EMRS.

If any of the Key Meter Technical Details changes another proving test will be required. The Key Meter Technical Details are:

- Outstation ID,
- Meter Serial Number,
- Outstation Number of Channels,
- Measurement Quantity ID,
- Meter Multiplier,
- Pulse Multiplier; and
- Instrument Transformer Ratios.

12. What are the test facility requirements?

For any CMU that has its Metering Equipment registered in CMRS or SMRS the test facilities must meet the requirements as specified in the applicable CoP[17] as a minimum, depending on the capacity of the circuit.

For any CMU that is operating using a Bespoke Metering Configuration Solution the test facilities must meet the requirements of the Bespoke Technical Requirements specified in Schedule 7 of the CM Rules as a minimum, depending on the capacity of the circuit.

[17] https://bscdocs.elexon.co.uk/codes-of-practice

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The Meter(s) is connected to the secondary side of the CTs and/or VTs via test terminal facilities and in the case of voltage connections also via fuses. These facilities should be configured so as to allow the Meter(s) to be isolated while the circuit is energised for test purposes or replacing the Meters.

For CoP1 and CoP2 Metering Systems (and Type 1 and Type 2 Metering Systems in Bespoke) separate testing facilities shall be provided for the main and check Meters, this allows one Meter to be worked on or removed while the other continues to measure the prevailing load. For CoP3 and CoP5 Metering Systems (and Type 3 and Type 4 Metering Systems in Bespoke) testing facilities shall be provided close by the Meters of each circuit. For all situations the Meters are separately fused.

A Capacity Provider can choose to exceed these requirements to install a more robust and accurate Metering System. For example, by installing separate testing facilities for the main and check Meters in a CoP3 site or a Type 3 Bespoke site.

Examples of test facilities can be seen in Diagrams 9, 10, 11 and 12.

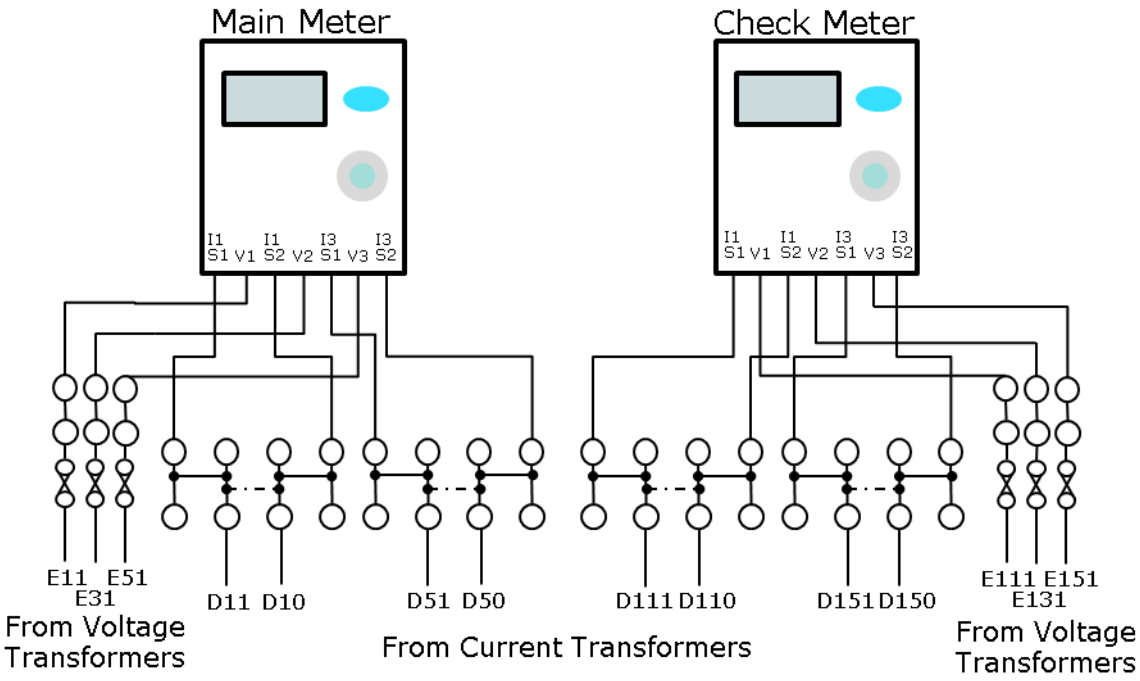

Diagram 9 Test Facilities Example - CoP 1 and Bespoke Type 1

Diagram 9 is an example of the minimum testing facilities required for a CoP1 and a Bespoke Type 1 installation. A set of multi-core cables will come from the main VT or main winding for the main Meter and another set of multi-core cables will come from the check VT or check winding for the check Meter. Any other burden connected to the VT would be connected to the check winding and separately fused.

A set of multi-core cables will come from the main CT or main winding for the main Meter and another set of multi-core cables will come from the check CT or check winding for the check Meter.

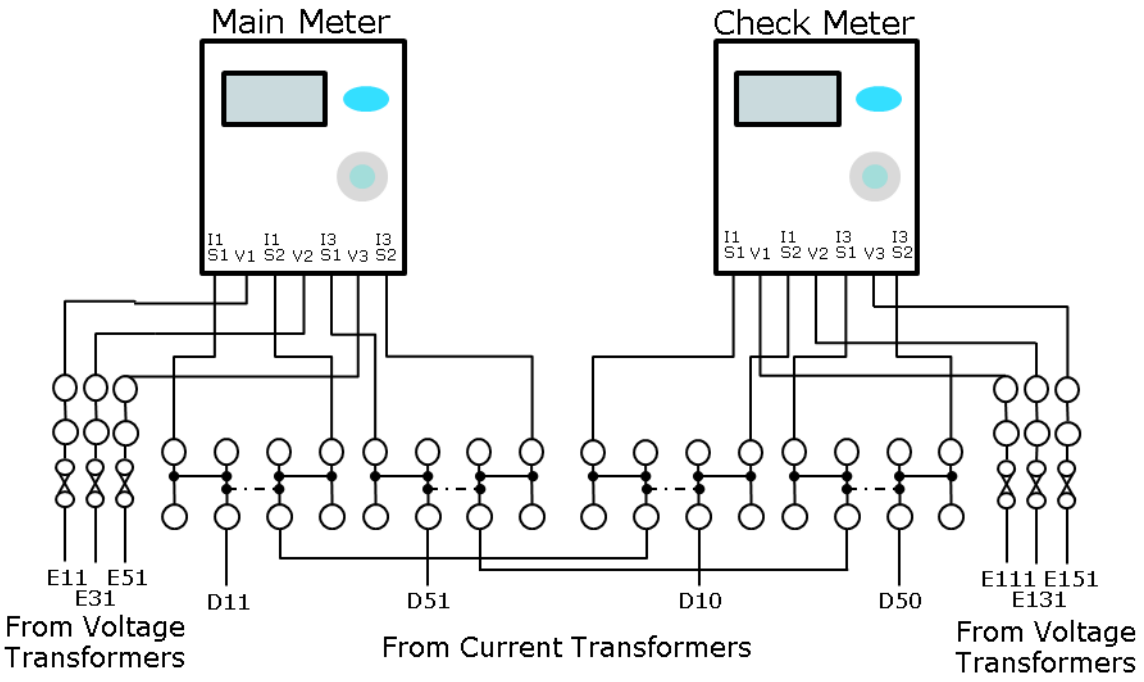

Diagram 10: Test Facilities Example – CoP2 and Bespoke Type 2 (separate CTs).

Diagram 10 is an example of the minimum testing facilities required for a CoP2 and Type 2 Bespoke installation. If a second set of CTs and/or VTs is used for the check Meter, refer to Diagram 9.

One set of multi-core cables will come from the VT and be used for main and check Meter. The connections will be separated in the metering panel.

Any other burden connected to the VT must be connected to another winding and separately fused.

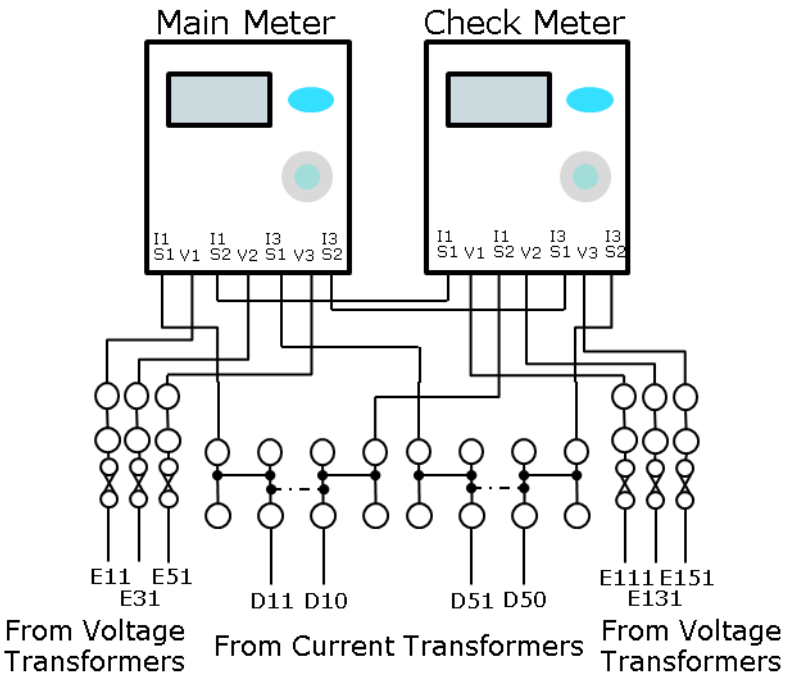

Diagram 11: Test Facilities Example – CoP3 and Bespoke Type 2 (one set of CTs) and Type 3

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Diagram 11 is an example of the minimum testing facilities required for a CoP3 and a Bespoke Type 3 installation. It is only capable to be used in a Type 2 installation if one set of CTs is used. If a second set of CTs and/or a second VT is used for the check Meter refer to Diagram 9.

One set of multi-core cables will come from the VT and be used for main and check Meter. The connections will be separated in the metering panel.

Any other burden connected to the VT must be separately fused.

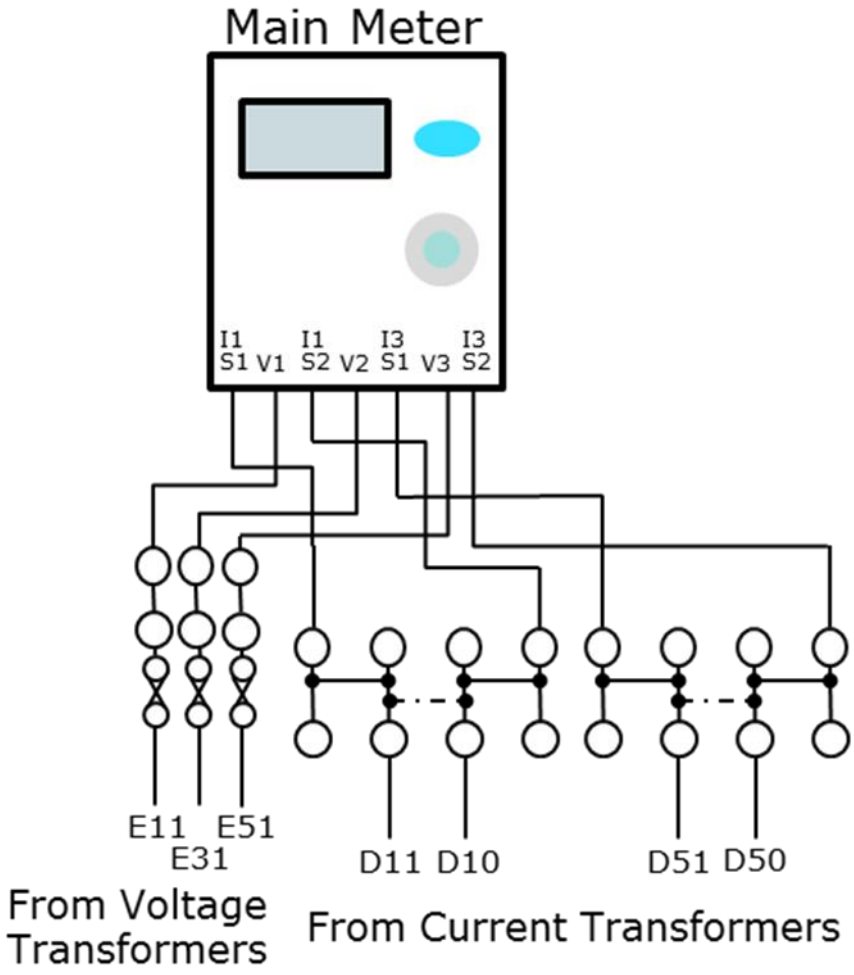

Diagram 12: Test Facilities Example – CoP5 and Bespoke Type 4

Diagram 12 is an example of the minimum testing facilities required for a CoP5 and a Bespoke Solution Type 4 installation.

This is only applicable to circuits with a rated capacity less than 1MW, typically in aggregating CMUs or for Auxiliary Load circuits.

Any other burden connected to the VT must be separately fused.

An example of the type of test facility positions for normal running, isolation and testing can be seen in Diagram 13.. Other types of test facility can be used; the example used is for illustration of the functionality required.

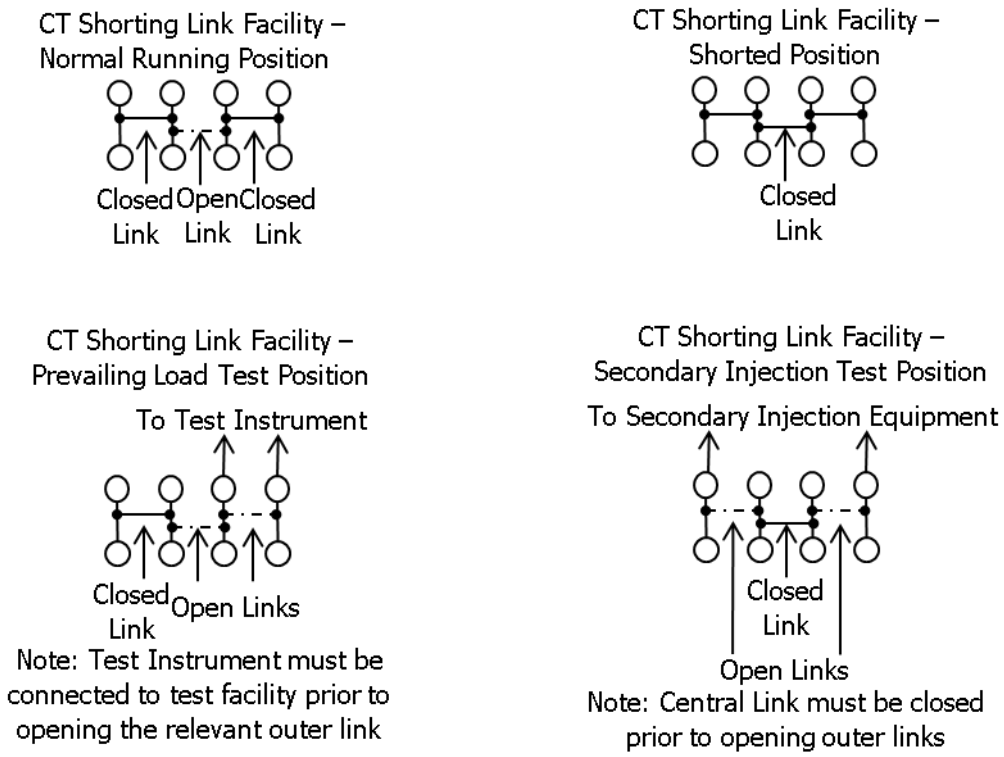

Diagram 13: Test Facility – Running and Test Positions.

Examples of the four modes of operation of the testing facilities connected to the CTs:

Normal running position;

Shorted position;

Connection of a test instrument to prevailing load; and

Shorted to allow secondary injection of the metering.

Other types of test facilities are available and may have a different method of operation to the example illustrated. The instructions on the operation of the test facilities as provided by their manufacturer must be followed. The example used above is for illustration of the functionality required.

13. What are the Meter set-up requirements?

As a minimum the Half Hourly Meter must record AI and AE on a half hourly basis (i.e. an AI and AE load profile channel). If the Meter is also being used for BSC Settlement purposes, there will be a requirement to record Reactive Energy in addition.

All data will be in a Settlement Period format. This will be of 30-minute duration starting on an hour or half hour; there will be 48 periods in a day starting at 00:00. Each Settlement Period will be in energy format (e.g. multiples of Wh).

The Meter time will be set to Co-ordinated Universal Time (UTC), also known as Greenwich Mean Time (GMT). No switching between UTC and British Summer Time (BST) shall occur for Settlement Period data storage within the Meter.

The display of the Meter will have a cumulative AI and AE register (if used for BSC there will be Reactive Energy registers in addition to this), the CT & VT ratios, current date and time as a minimum.

14. What is the Metering Assessment?

The Metering Assessment is a questionnaire relating to the metering arrangements for a CMU, which is completed via My EMRS. Submission of a Metering Assessment is mandatory, as the responses supplied in the questionnaire determine whether a Metering Test is required.

The table below sets out the deadlines by which EMRS must have received the Metering Assessment, which can also be found in Section 8.3.3(a),(b),(ba) of the CM Rules.

Table 5: Metering Assessment Submission

CMU Category	Auction Type	Time period between Auction Results Day and Start of Delivery Year	Metering Assessment Submission Deadline
Unproven DSR (Capacity Agreement for one Delivery Year)	T-1	NA	The day prior to the date falling four months prior to the start of the relevant Delivery Year
	T-3	NA	
	T-4	NA	
Unproven DSR (Capacity Agreement exceeding one Delivery Year)	T-4	NA	The day prior to the date falling four months prior to the start of the second Delivery Year to which the Capacity Auction relates
Proven DSR	T-1	< 8 Months	The date falling four months after the auction
	T-1	> 8 Months	The date falling six months prior to the start of the relevant Delivery Year
	T-3	NA	The date falling six months prior to the start of the relevant Delivery Year
	T-4	NA	The date falling three years prior to the start of the relevant Delivery Year
Existing CMU (Existing Generating, Existing Interconnector, Refurbishing Generating & Refurbishing Interconnector)	T-1	< 8 Months	The date falling four months after the auction
	T-1	> 8 Months	The date falling six months prior to the start of the relevant Delivery Year
	T-3	NA	The date falling six months prior to the start of the relevant Delivery Year
	T-4	NA	The date falling three years prior to the start of the relevant Delivery Year
Prospective CMU (New Build Interconnector & New Build Generating)	T-1/T-4	NA	No later than the long stop date

Following submission of the Metering Assessment, EMRS will advise you if a Metering Test is required. If no Metering Test is required, it will be assumed that the metering fully complies with the requirements of CM Rules.

The **specific deadline dates** to submit a Metering Assessment for the upcoming Delivery Year are available on our Stakeholder Support for Capacity Providers webpage.

Please note, although our CM Metering Register includes details for prequalified CMUs, you are only required to complete a Metering Assessment once a Capacity Agreement has been awarded. **For CMUs with a type of 'New**

Build Interconnector' or 'New Build Generating' the Metering Assessment deadline is based on your Long Stop Date. For further information on when to submit your Metering Assessment, please see Section 8.3 of the Informal consolidation of the Capacity Market Rules.

15. What is the Metering Statement & Metering Test?

If EMRS state that a Metering Test is required, the Capacity Provider will need to submit evidence via My EMRS about the compliance of their Metering System, this is in the form of the Metering Statement specified in Schedule 6 of the CM Rules[18]. The Metering Test will then determine whether a Capacity Provider has an Approved Metering Solution installed. Note that the Metering Test itself is desk-based.

For example, the Metering Statement will contain CMU information, Meter and Instrument Transformer test certificates, Meter and Instrument Transformer commissioning test results, Instrument Transformer burdens, meter technical details, single line diagram, transformer error/loss compensation calculations, and the method the Capacity Provider will get data from the Meters to the EMR Settlement System.

This is not an exhaustive list. For more information on the Metering Test process refer to WP197 - Capacity Market Metering Test[19] and for guidance on completing a Metering Statement refer to G20 - Capacity Market Metering Statement[20]. Additionally, we have produced a short training video on submitting Metering Tests in My EMRS which can be used in conjunction with this document.

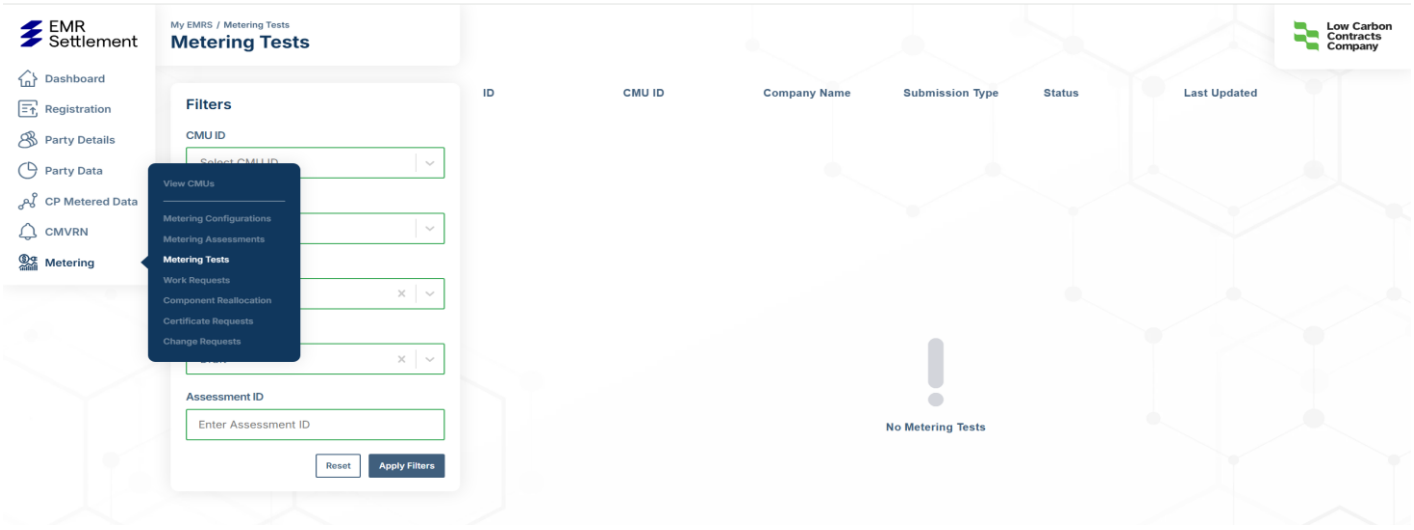

Diagram 14: Metering Test Screen

The Metering Test Request and Metering Statement must be submitted by the deadlines specified in Rule 13.3.2A. The table below summarises the requirements.

Table 6: *Metering Test Request and Metering Statement deadlines.*

CMU Category	Auction Type	Time period between Auction Results Day and Start of Delivery Year	Metering Test Request / Metering Statement Submission Deadline
Unproven DSR (Capacity Agreement for one Delivery Year)	T-1	NA	The date falling four months prior to the start of the relevant Delivery Year
	T-3	NA	
	T-4	NA	
Unproven DSR	T-4	NA	The date falling four months prior to the start of the second Delivery Year to which the Capacity Auction relates

[18] Capacity Market Rules available on the Ofgem website https://www.gov.uk/government/publications/capacity-market-rules
[19] https://emrsettlement.co.uk/publications/working-practices/
[20] https://www.emrsettlement.co.uk/publications/guidance/

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CMU Category	Auction Type	Time period between Auction Results Day and Start of Delivery Year	Metering Test Request / Metering Statement Submission Deadline
(Capacity Agreement exceeding one Delivery Year)			
Proven DSR	T-1	< 8 Months	The date falling four months prior to the start of the relevant Delivery Year
	T-1	> 8 Months	The date falling five months prior to the start of the relevant Delivery Year
	T-3	NA	The date falling two years prior to the start of the relevant Delivery Year
	T-4	NA	The date falling twenty-one months prior to the start of the relevant Delivery Year
Existing CMU (Existing Generating, Existing Interconnector, Refurbishing Generating & Refurbishing Interconnector)	T-1	< 8 Months	The date falling four months prior to the start of the relevant Delivery Year
	T-1	> 8 Months	The date falling five months prior to the start of the relevant Delivery Year
	T-3	NA	The date falling two years prior to the start of the relevant Delivery Year
	T-4	NA	The date falling twenty-one months prior to the start of the relevant Delivery Year
Prospective CMU (New Build and Refurbishing)	T-1/T-4	NA	We recommend you submit your Metering Test request as soon as possible and no later than the **long stop date**.

The definition of a long stop date refers to:

- In the case of T-1 Auction CMUs the **long stop date** refers to the start of the Delivery Year for which that CMU has an agreement.
- In the case of T-4 Auction CMUs, the **long stop date** refers to twelve months after the start of the Delivery year for which that CMU has an agreement.

For example, for a T-4 CMU, the long stop date for the 2025/26 Delivery Year is 30 September 2026, for a T-1 CMU the long stop date for the 2025/26 Delivery Year is 1 October 2025.

Upon successful completion of the Metering Test, the Capacity Provider will then need to request a Metering Test Certificate via My EMRS.

The table below summarises the requirements of Rule 8.3.3 (e) and (eza):

Table 7: *Metering Test Certificate deadlines.*

CMU Category	Auction Type	Metering Test Certificate Deadline
Existing CMU or Proven DSR	T-4/T-3	The date falling 18 months prior to the start of the first Delivery Year.
Existing CMU or Proven DSR	T-1 (or where the time period between the Delivery Year and the auction is less than eight months)	The date falling two weeks prior to the start of the first Delivery Year.

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CMU Category	Auction Type	Metering Test Certificate Deadline
Unproven DSR (Capacity Agreement for one Delivery Year)	T-1	The date falling 10 Working Days prior to one month before the commencement of the Delivery Year for that Capacity Agreement[21].
Unproven DSR (Capacity Agreement for one Delivery Year)	T-4	The date falling 20 Working Days prior to one month before the commencement of the Delivery Year for that Capacity Agreement[22].
Unproven DSR (Capacity Agreement for a duration exceeding one Delivery Year)	T-4	The date falling 20 Working Days prior to one month before the commencement of the second Delivery Year to which the Capacity Auction relates[23].
Prospective CMU, Refurbishing CMU or New Build CMU	T-1/T-4	As soon as reasonably practicable after the date on which the Capacity Provider receives notification under Rule 8.3.3 (d)(i), and in any event not later than the Long Stop Date
Refurbishing CMU or New Build CMU		We recommend you submit your Metering Test request as soon as possible and no later than the long stop date.
	Any	By the 40th Working Day from notification of Metering Test required under Rule 8.3.3 (c)(i)

The definition of a long stop date refers to:

- In the case of T-1 Auction CMUs the **long stop date** refers to the start of the Delivery Year for which that CMU has an agreement.
- In the case of T-4 Auction CMUs, the **long stop date** refers to twelve months after the start of the Delivery year for which that CMU has an agreement.

For example, for a T-4 CMU, the long stop date for the 2025/26 Delivery Year is 30 September 2026, for a T-1 CMU the long stop date for the 2025/26 Delivery Year is 1 October 2025.

The **specific deadline dates** to complete a Metering Test for the upcoming Delivery Year are available on our Stakeholder Support for Capacity Providers webpage.

There could be a Site Audit during the Delivery Year. Capacity Providers will be notified if a Site Audit is to be conducted.

If the Metering System is a BSC registered Metering System then the Capacity Provider will arrange for either the BSC Central Volume Allocation (CVA) Meter Operator Agent (MOA)[24] or the Supplier Volume Allocation (SVA) Retail Energy

[21] This change in deadline for Unproven DSR CMUs is a result of a recent Ofgem consultation, to which the Government issued a response on 2 June 2025. The informal consolidation of the Capacity Market Rules was issued in June 2025 and is available here.
[22] This change in deadline for Unproven DSR CMUs is a result of a recent Ofgem consultation, to which the Government issued a response on 2 June 2025. The informal consolidation of the Capacity Market Rules was issued in June 2025 and is available here.
[23] This change in deadline for Unproven DSR CMUs is a result of a recent Ofgem consultation, to which the Government issued a response on 2 June 2025. The informal consolidation of the Capacity Market Rules was issued in June 2025 and is available here.
[24] If the Metering System is registered in CMRS

Code Metering Equipment Manager (MEM)[25] (as applicable) to attend, and a suitably authorised representative of the Distribution or Transmission Company to attend for Instrument Transformer access.

For an Unlicensed Network a suitably authorised site electrical engineer will be present to allow access to the Meters and Instrument Transformers (if a 3rd party MOA/MEM has been used the Capacity Provider must arrange for them to be on site).

16. What is the Site Audit?

The purpose of the Site Audit is to determine that a Capacity Provider has an Approved Metering Solution installed and can submit Metered Volumes to EMRS. A Capacity Provider will be informed by EMRS if they require a Site Audit. The Site Audit will be carried out during a Delivery Year.

The requirement for a Site Audit is based either on a random selection of CMUs that have completed a Metering Test based on the risk category the Metering System falls under (see below) or a targeted audit on the instruction of the ESC.

Risk Categories:

- Settlement Metering – CMRS,
- Settlement Metering – SMRS, and
- Non-Settlement – Bespoke and Balancing Services.

The percentage of CMUs or Components to be tested in a risk category will be determined by the ESC in the run up to the start of a Delivery Year.

Should a CMU selected for a Site Audit not have completed a Metering Test a Metering Statement must be submitted for that CMU or Component.

Part of the Site Audit is to check that data can be submitted to EMRS and where a CSV file of Metered Volumes is submitted to EMRS it will be checked that this is in the correct format and that the data matches what is expected from the date of the Site Audit.

Following the Site Audit EMRS will issue a compliance notice or a non-compliance notice. Should the Site Audit be failed and a non-compliance notice issued, the Capacity Provider will be subject to chapter 13A of the Rules (Metering Recovery Faults and Repayment of Capacity Payments).

17. How do I submit my Metering configurations?

Metering configurations are submitted for each CMU Component making up the CMU on the Metering Configurations page on My EMRS. Further information on how to use My EMRS can be found in G25 - My EMRS User Guide. We have produced a short training video on submitting Metering Configurations in My EMRS which can be used in conjunction with this document.

[25] If the Metering System is registered in SMRS

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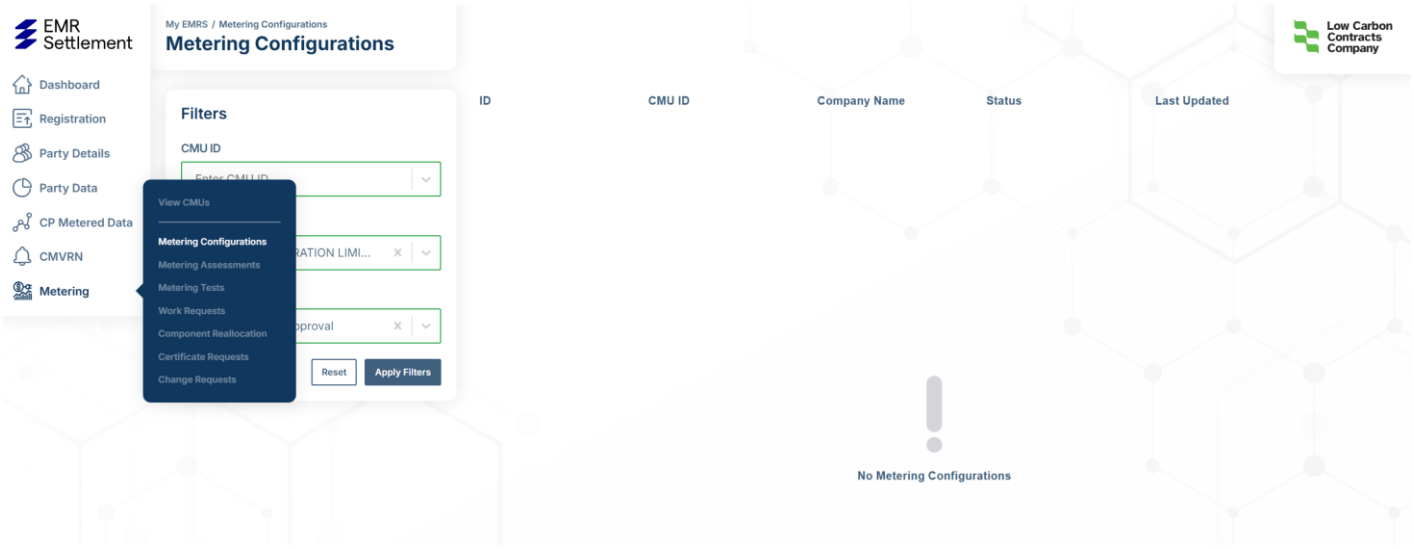

Diagram 15: Metering Configuration Page

The information required is dependent on the metering configuration used for the Component. You can have combinations of configurations, for example, if you have a Bespoke Metering Configuration Solution being used to exclude some ineligible generation from a Boundary Point SMRS Metering System. EMRS will create the Metering configurations based on what information has been submitted as part of the Metering Configuration.

A Bespoke or Balancing Services Metering Configuration Solution is referred to as a 'BMEID' in the Portal.

List of required data items for each configuration:

BMU

- BMU ID; and
- Multiplier.

MPAN

- MPAN; and
- Multiplier.

BMEID within a Transmission System connected site

- BMEID (CSV file identifier),
- Multiplier; and
- Boundary BMU ID.

BMEID within a Distribution System connected site Registered in CMRS

- BMEID (CSV file identifier),
- Multiplier,
- Boundary BMU ID,
- Licensed Distribution System Operator ID; and
- Metering System Identifier for CMRS Metering System.

BMEID within a Distribution System connected site Registered in SMRS

- BMEID (CSV file identifier),
- Multiplier,
- Boundary MPAN,
- Licensed Distribution System Operator ID; and
- Line Loss Factor Class ID.

The multiplier is always 1.00 unless ineligible generation is being excluded in which case it is -1.00; or where a metered volume is being apportioned across Components (e.g. a single Auxiliary Load BMU ID split equally across four Generating Units in which case it is 0.25).

Once the Capacity Provider has saved and submitted the metering configuration information, EMRS will receive a notification to review the metering configuration. Once the review is completed the Capacity Provider will receive a notification informing them that it is complete.

NOTE: Individual Components within a CMU may be rejected, so it is important to log in to check all Components have been approved.

18. What if my Metering arrangements change?

When changes occur in the Metering arrangements on a site involved in the Capacity Market, the Capacity Provider has obligations under the Capacity Market Rules.

In the Capacity Market under Rule 8.3.3(f) (ii) and (iii) in the metering section of the Rules state:

Capacity Provider or CMVR Registered Participant must:

(ii) notify the CM Settlement Body in advance of any proposed change to:

Where a Metering Assessment is amended the CM Settlement Body must notify the Delivery Body as soon as reasonably practicable whether based on such updated Metering Assessment, the metering arrangements for such CMU will be subject to a Metering Test. The Capacity Provider/ Registered participant will need to follow the Capacity Market Rules 8.3.3(f) (ii) process to request a metering configuration change, if these rules are applicable. For example, to switch from an MPAN to BMU. This is raised using My EMRS and submitting a 'Change Request'[26].

The EMRS Metering Team role is to validate the requests and confirm compliance.

A change proposed by a Capacity Provider will require information to be submitted to be able to carry out the validation checks. This can be a combination of an metering configuration change and a Metering Equipment change or only one of these elements.

The lists below are split for metering configuration changes and Metering Equipment changes. **NOTE: You may have to request elements of both depending on the nature of the change.**

18.1. Metering configuration changes

The Metering Configuration is submitted for review on My EMRS. For further information on how to use My EMRS, please see G25: My EMRS User Guide[27]. We have produced a short training video on submitting Metering Configuration in My EMRS which can be used in conjunction with this document. The information required and checks carried out are as follows:

MPAN Change

- ECOES check on new MPAN and the Effective From Date of the new MPAN.

BM Unit Change

- BMU ID check on registered BM Unit list found on the Elexon Portal[28];
- This check can also be used for interconnector changes; and
- The Effective From Date of the new BMU ID.

CSV File Metered Entity ID Change (for Bespoke/Balancing Services)

- ECOES check for any Boundary Point MPANs and LLF values; and
- CSV file for new identifier and format check; and the Effective From Date of the new identifier.

witch from SMRS to CMRS Metering

- Requires the current MPAN and the new BMU ID and the Effective From Date of the new BMU ID; and

[26] Click here to access a training video on submitting Change Requests via My EMRS.
[27] https://www.emrsettlement.co.uk/publications/guidance/
[28] https://www.elexonportal.co.uk/

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- BMU ID check on registered BM Unit list found on the Elexon Portal.

Switch from CMRS to SMRS Metering

- Requires the current BMU ID and the new MPAN with Effective From Date; and
- ECOES check on new MPAN.

Switch from CSV File Metered Entity ID to CMRS Metering

- Requires current CSV file identifier and new BMU ID with Effective From Date; and
- BMU ID check on registered BM Unit list found on the Elexon Portal.

Switch from CSV File Metered Entity ID to SMRS Metering

- Require current CSV file identifier and new MPAN with Effective From Date; and
- ECOES check on new MPAN.

Switch from CMRS/SMRS to CSV File Metered Entity ID

- Requires current BMU ID/ MPAN and new CSV file identifier with Effective From Date,
- This requires a Metering Test to have been completed before change can take effect,
- Check CSV file identifier against Metering Statement CSV file submission; and
- ECOES check for any Boundary Point MPANs and LLF values or BMU ID check on registered BM Unit list found on the Elexon Portal.

Addition of a new Metering System

Require the additional BMU ID/MPAN/ CSV file identifier as applicable and Effective From Date. Follow relevant procedure above.

18.2. Metering Equipment changes

Depending on the nature of the Metering Equipment change, a full Metering Test may be required, or where only an element (e.g. a Meter) has been changed only a partial check is required.

The information required is as follows:

Meter Change

- Meter Calibration Certificates,
- Metering Commissioning Records,
- Meter Proving Test; and
- Meter Technical Details (D0268 or BSCP20 or updated Schedule 6 Section (c) or (d) for Capacity Market Bespoke or Balancing Services Metering Configuration Solutions).

Measurement Transformer Change

- Measurement Transformer Calibration Certificates,
- Measurement Transformer Commissioning Records (if multi-ratio evidence required on what ratio has been selected),
- Measurement Transformer error compensation calculations and evidence of compensation values programmed into Meter,
- Measurement Transformer Burdens,
- Meter Technical Details (if ratio change - D0268 or BSCP20 or updated Schedule 6 Section (c) or (d) for Capacity Market Bespoke or Balancing Services Metering Configuration Solutions); and
- Meter Commissioning Records.

Metering System change (Meters and Measurement Transformers)

- If the CMU Component had a Metering Test, a new Metering Statement is required and full Metering Test needs carried out. **OR**
- If the CMU Component did not require a Metering Test, then the information listed in Meter Change and Measurement Transformer Change is required.

For more information on the Metering Test see Section 14 of this guidance document.

Should all validation tests be completed and continued compliance with the Capacity Market Rules and relevant Governing Documents demonstrated a compliance notification will be issued, and if applicable a Metering Test Certificate.

If compliance with the Capacity Market Rules and relevant Governing Documents is not demonstrated a non-compliance notification will be issued and the Capacity Provider will have to resolve the issues identified.

19. Need more information?

For more information, please visit our website www.www.emrsettlement.co.uk or email us at contact@emrsettlement.co.uk

20. Appendix 1: Key Meter Technical Details Form

KEY METER TECHNICAL DETAILS FORM

CMU Details

CMU ID:..... **CMU Component ID:**.....

Generator or DSR:.....

CMU Site Address:..... **Site Contact: Name**.....

..... **Tel No.**.....

.....

Site Access Information:.....

.....

.....

Circuit Configuration:.....

Instrument Transformers

Current Transformer: Ratio..... **Accuracy Class**.....

Rated Burden.....**VA**

Serial Numbers: L1..... **L2**..... **L3**.....

Voltage Transformer: Ratio..... **Accuracy Class**.....

Rated Burden.....**VA**

Serial Numbers: L1..... **L2**..... **L3**.....

Meter Details

Meter Serial Numbers: Main Meter..... **Outstation PIN:**.....

Check Meter..... **Outstation PIN:**.....

Password: Level 1:..... **Level 2:**.....

Communications: Method:..... **Baud Rate:**.....

Comms No.:.....

Time Synchronisation to UTC:

Manual via HHU/By Radio Clock/Automated via Data Collector*

***Delete as appropriate**

Meter Technical Details

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Channel Number	Measurement Quantity ID	Meter Register ID	Meter Register Multiplier	Pulse Multiplier

Print Name……

Signed……..

Date…….