

# WP197 – Capacity Market Metering Test

EMRS Working Practice

PublicPublic

**Version:** 9.0  
**Date:** 20 December 2022



**EMR  
SETTLEMENT  
LIMITED**



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## 1. Change Amendment Record

Version	Date	Description
2.0	02 March 2016	Go-Live Version
3.0	12 February 2018	Updated for new Rule (13.3.2A) for Metering Test Request/Metering Statement submission deadline; Metering Agent aggregation rule process removed.
4.0	20 July 2018	Updated for Rules changes on deadline for Metering Test Certificates, the deadline for rectifying failed Metering Tests and Schedule 6 updates in sections 2.1, 3.1, 3.3 and 6.4 (Appendix 4)
5.0	22 May 2019	Updated Metering Test Certificate deadlines for 2019/20 and 2020/21 Delivery Years in section 2.1
6.0	23 July 2019	Updated sections 3.1, 4.3 and 4.4 for DSR CMU component reallocation and the T-3 Auction
7.0	8 July 2020	Updated section 3.1 for new deadlines for Unproven DSR CMUs with Capacity Agreements exceeding one Delivery Year; Section 3.3 and 4 updated to correct numbering format. Updated section 3.1 for modifications due to the effect of the Coronavirus
8.0	14 July 2021	Updated section 3.1 for new deadlines for Refurbishing CMUs and modifications due to the effect of the Coronavirus; historical deadlines removed.
9.0	20 December 2022	Housekeeping updates

## 2. Introduction

In order to enter the Capacity Market (CM), some Capacity Providers will need to have a Metering Test performed by the Settlement Body (Electricity Settlements Company). If they can successfully pass this Metering Test they will receive a Metering Test Certificate which will then be submitted to the Delivery Body (National Grid) by the Capacity Provider.

The Electricity Settlements Company (ESC) has outsourced the Metering Test process to a Management Services Provider (MSP). The MSP will appoint a suitably qualified agent to check compliance to the technical specifications and perform onsite testing. This working practice is also relevant to that nominated representative of the MSP; the Metering Agent (MA).

A Capacity Provider will answer some questions in the Metering Assessment regarding their metering arrangements and connection to the Total System (Distribution, Transmission or via an Unlicensed Network). From the results, the Delivery Body will decide whether a Metering Test is required.

The Metering Test will be a desk based analysis of the metering information submitted by the Capacity Provider; in some cases there will be a second stage, after the Metering Test Certificate is issued, where a Site Audit is conducted to prove compliance during a Delivery Year (the Site Audit is not discussed in this working practice).

For a Demand Side Response (DSR) Capacity Market Unit (CMU) the DSR Test Certificate and the Metering Test Certificate are linked. Both certificates must specify the same metering configuration for any DSR CMU Component comprised in the DSR CMU. If this is not the case the DSR Test Certificate will be invalidated.

### 2.1 Scope and Purpose

This document has been written by EMR Settlement Ltd (EMRS) on behalf of the Electricity Settlements Company (ESC) for the Capacity Market. It covers procedures for the Management Services Provider (MSP) and Metering Agent (MA) roles. The MSP role is being fulfilled by EMRS.

This document is aimed at any Capacity Provider participating in the Capacity Market that requires a Metering Test to be carried out on their metering installation. This working practice will specify the information required to conduct the Metering Test and the timescales for its completion.

The purpose of the Metering Test is to determine that a Capacity Provider has an Approved Metering Solution installed. A Capacity Provider will be informed by the Delivery Body if they require a Metering Test; this is based on the Metering Assessment submitted as part of the prequalification application or completed following the Auction results.

The Delivery Body is the National Grid Electricity System Operator. If the Delivery Body state that no Metering Test is required, it will be assumed that the metering fully complies with the requirements of the Capacity Market.

## 2.2 Main Users and Responsibilities

Table 1: Main Users and Responsibilities.

Role	Responsibilities
Capacity Provider	They will provide the required information to carry out the Metering Test
Delivery Body	For managing the Metering Assessment process and determining whether a CMU requires to undergo a Metering Test
Electricity Settlements Company (ESC)	The Electricity Settlements Company ("Settlement Body") is responsible for managing the Capacity Market Metering Assurance process. ESC has contracted the Management Services Provider to deliver the Metering Assurance
EMR Settlement Ltd (EMRS)	Service Provider (Settlement Agent) who will perform the Capacity Market Settlement Service on behalf of the Electricity Settlements Company (ESC). They will receive the Metering Agent Aggregation Rule
Management Services Provider	Service Provider who will perform the management of the Metering Assurance Process on behalf of the Electricity Settlements Company (ESC). They will appoint the Metering Agent, review and process Metering Statements, and issue the Metering Test Certificate
Metering Agent	Service Provider who will perform the analysis of technical specifications and test results on behalf of the Management Services Provider

## 2.3 Associated Documents

This Working Practice should be read in conjunction with the following documents:

- Electricity Capacity Regulations 2014<sup>1</sup> and all subsequent amendments
- Capacity Market Rules 2014<sup>2</sup> and all subsequent amendments
- Capacity Market (Amendment) Rules 2015<sup>2</sup>
- BSCP27 – Technical Assurance of Half Hourly Metering Systems for Settlement Purposes<sup>3</sup>
- WP133 - Metering Disputes Resolution Procedure<sup>4</sup>
- G20 – Capacity Market Metering Statement<sup>5</sup>
- LCCC CM Dispute Resolution Document<sup>6</sup>

## 3. Methodology

### 3.1 Metering Test Deadlines

The timescales allowed to complete the Metering Test are dependent on the circumstances of the Capacity Provider and the auction they have participated in. The latest version of the Capacity Market Rules and the version in effect when the CMU Prequalified should be checked to confirm the deadlines relevant to a Metering Test Request/Metering Statement submission (Rule 13.3.2A or 13.2.12D as applicable) and providing a Metering Test Certificate to the Delivery Body (Rule 8.3.3 (e) or 8.3.4 (h) (ii) or 13.2.12D as applicable). Where there is a discrepancy between the Capacity Market Rules and this document the Rules take precedence.

The dates below (correct for 2021 Rules) are the point that the Capacity Provider is required to submit a Metering Test Request and a Metering Statement to EMRS (acting on behalf of ESC) for every Auction and for modifications for the effects of the Coronavirus (for the Coronavirus modifications (3.1.1) go to the end of this section):

- in the case of an Unproven DSR CMU awarded a Capacity Agreement of a duration of one year only, the date falling four months prior to the start of the relevant Delivery Year;
- in the case of an Unproven DSR CMU awarded a Capacity Agreement of a duration exceeding one Delivery Year, the date falling one month before the commencement of the second Delivery Year to which the Capacity Auction relates;
- in the case of an Existing CMU or a Proven DSR CMU that has been awarded a Capacity Agreement in a T-4 or T-3 Auction, the date falling twenty-one months prior to the start of the first Delivery Year of the relevant Capacity Agreement;
- in the case of an Existing CMU or a Proven DSR CMU that has been awarded a Capacity Agreement in a T-1 Auction, the date falling five months prior to the start of the relevant

<sup>1</sup> <http://www.legislation.gov.uk/ukxi/2014/2043/contents/made>

<sup>2</sup> <https://www.gov.uk/government/publications/capacity-market-rules>

<sup>3</sup> <https://www.elexon.co.uk/bsc-related-documents/related-documents/bscps/>

<sup>4</sup> <https://emrsettlement.co.uk/publications/working-practices/>

<sup>5</sup> <https://www.emrsettlement.co.uk/publications/guidance/>

<sup>6</sup> <https://www.lowcarboncontracts.uk/publications/capacity-market-dispute-resolution-0>

Delivery Year where the time period between the Auction Results Day and the start of the relevant Delivery Year is more than eight months;

- in the case of an Existing CMU or a Proven DSR CMU where the time period between the Auction Results Day and the start of the relevant Delivery Year is less than eight months, the date falling four months prior to the start of the relevant Delivery Year; or
- in the case of a Prospective CMU, 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.

The dates below (correct for 2021 Rules) are the point that the Capacity Provider is required to submit a Metering Test Certificate to the Delivery Body for every Auction other than modifications for the effects of the Coronavirus (for the Coronavirus modifications go to the end of this section):

- Date falling 18 months prior to start of first Delivery Year for an Existing CMU or Proven DSR CMU awarded a Capacity Agreement in the T-4 or T-3 auction;
- Date falling two weeks prior to start of relevant Delivery Year for an Existing CMU or Proven DSR CMU awarded a Capacity Agreement in the T-1 auction;
- Date falling two weeks prior to start of relevant Delivery Year for an Unproven DSR awarded a Capacity Agreement of a duration of one year only;
- Date falling two weeks before the commencement of the second Delivery Year of the Capacity Agreement for an Unproven DSR CMU awarded a Capacity Agreement of a duration exceeding one Delivery Year;
- As soon as reasonably practicable after the CMU is informed it requires a Metering Test and not later than the Long Stop Date for a Prospective CMU (New Build Generator, New Build Interconnector or Refurbishing Generator CMU);
- Within 40 working days of notification that a Metering Test is required for Proven DSR CMU Components, during a Delivery Year, where metering configuration details differ from those provided under Rule 13.2.5 (as per Rule 13.2.12D); or
- Within 40 working days of notification that a Metering Test is required for Proven DSR CMU Components, during a Delivery Year, added under DSR CMU Component reallocation under Rule 8.3.4 (e).

Where the Long Stop Date in relation to Rule 8.3.3(e) and 13.3.2A is:

- for any Refurbishing CMU in a T-4 Auction, the date falling 12 months after the start of the CMU's first scheduled Delivery Year; or
- for any New Build CMU or Refurbishing CMU in a T-1 Auction, the date falling at the start of the relevant Delivery Year; or
- for any New Build CMU in a T-4 or T-3 Auction, the date falling 12 months after the start of the CMU's first scheduled Delivery Year.

It is recommended to start the process as soon as possible to allow time for any issues identified to be addressed.

### 3.1.1 Modifications due to the effect of the Coronavirus

The Metering Test Request, Metering Statement submission and Metering Test Certificate deadlines have been modified in respect of the effects of the Coronavirus. An Extended Long Stop Date may be applicable, subject to Rule 8.3.2ZA for Unproven DSR CMUs and Rule 6.7.4A for Prospective CMUs. See below for more details. For the Extended Long Stop Date to be applicable a Capacity Provider must have provided the Delivery Body with a report by an Independent Technical Expert; please see the requirements of the relevant Rules (8.3.2ZA or 6.7.4A) or contact the Delivery Body for more information.

For a Capacity Provider awarded an agreement for the Delivery Year starting 1 October 2019, 2020 and 2021 the changes to the deadline to submit a Metering Test Request and a Metering Statement to EMRS (acting on behalf of ESC) is:

- As soon as reasonably practicable after the CMU is informed it requires a Metering Test and not later than the Long Stop Date for a Prospective CMU (New Build Generator, New Build Interconnector or Refurbishing Generator CMU) or where Rule 6.7.4A applies (New Build Agreements with first Scheduled Delivery Year starting 1 October 2020 for T-1 and 1 October 2019 and 1 October 2020 for T-4; and Refurbishing Agreements with first Scheduled Delivery Year starting 1 October 2020 for T-4 and 1 October 2020 for T-1) the Extended Long Stop Date; and
- Where Rule 8.3.2ZA applies for an Unproven DSR awarded a T-1 or T-4 Capacity Agreement for the Delivery Year starting 1 October 2020; and for an Unproven DSR awarded a T-4 Capacity Agreement for the Delivery Year starting 1 October 2021 no later than 30 May 2022.

For a Capacity Provider awarded an agreement for the Delivery Year starting 1 October 2019, 2020 and 2021 the changes to the Metering Test Certificate deadline is:

- As soon as reasonably practicable after the CMU is informed it requires a Metering Test and not later than the Long Stop Date for a Prospective CMU (New Build Generator, New Build Interconnector or Refurbishing Generator CMU) or where Rule 6.7.4A applies (New Build Agreements with first Scheduled Delivery Year starting 1 October 2020 for T-1 and 1 October 2019 and 1 October 2020 for T-4; and Refurbishing Agreements with first Scheduled Delivery Year starting 1 October 2020 for T-4 and Delivery Year starting 1 October 2020 for a T-1) the Extended Long Stop Date; and
- Where Rule 8.3.2ZA applies for an Unproven DSR awarded a T-1 or T-4 Capacity Agreement for the Delivery Year starting 1 October 2020 or a T-4 Capacity Agreement for the Delivery Year starting 1 October 2021 no later than 17 September 2022.

Where the Long Stop Date is:

- (a) for any Refurbishing CMU in a T-4 Auction, the date falling 12 months after the start of the CMU's first scheduled Delivery Year or, if the CMU meets the eligibility requirements in Rule 6.7.4A, the Extended Long-Stop Date; OR
- (b) for any New Build CMU or Refurbishing CMU in a T-1 Auction, the date falling at the start of the relevant Delivery Year except where (d) applies; OR
- (c) for any New Build CMU in a T-4 or a T-3 Auction, the date falling 12 months after the start of the CMU's first scheduled Delivery Year except where (d) applies; OR
- (d) in the case of a New Build CMU or Refurbishing CMU which meets the eligibility requirements in Rule 6.7.4A, the Extended Long-Stop Date.



The Extended Long Stop Date is 30 September 2022.

### 3.2 Metering Test Request

Where a Capacity Provider has been informed that a CMU requires a Metering Test they should request a Metering Test from the MSP.

This request must state the following:

- CMU ID
- Contact details for Capacity Provider
- Component IDs
- Metering System Identifiers (i.e. MPANs, MSIDs, BM Units or Metered Entity Identifiers) for each component; and
- Metering Configuration Solution for each Component.

Where the Metering Configuration Solution used by a component is Balancing Services the request must also specify the relevant Balancing Services Agreement (only Short Term Operating Reserve (STOR), Firm Frequency Response (FFR) and Frequency Control by Demand Management (FCDM) are allowed in the Capacity Market).

Where not all components making up the CMU require a Metering Test the request must specify which of those CMU Components require a Metering Test. (the format in Table 2 can be used to provide this information).

Table 2: CMU Component Required Information.

Component ID	Metering Configuration Solution	Metering System Identifiers	Metering Test Required
Component 1	Supplier Settlement	All MPANs	No
Component 2	Supplier Settlement	All MPANs	No
Component 3	Supplier Settlement	All MPANs	No
Component 4	Balancing Services	All Metered Entity IDs	Yes
Component 5	Bespoke	All Metered Entity IDs	Yes

For each component that requires a Metering Test, a Metering Statement must be submitted. Preferably one Metering Statement per site where the Metering Configuration Solution used is the same. So if a site has three components and they are all Bespoke this would be one Metering Statement; where the components are at different sites this would be three Metering Statements.

The requirements of the Metering Statement are discussed in Section 3.6.

### 3.3 Metering Test Timescales

The time allowed for each step in the process is outlined in the Interface and Timetable section of this document. A summary of MSP/MA tasks and response times are in Table 3.

Table 3: Metering Agent Role Timescales.

Reference	Task	MSP	MA	Timescales
3.3.1	Receive notification from the Capacity Provider that a CMU requires a Metering Test	Y		At any time
3.3.2	Request Metering Statement, where not included on the request for Metering Test	Y		Within 2 Working Days of 3.3.1
3.3.3	Receive the Metering Statement from the Capacity Provider and check the information is complete	Y		Within 2 Working Days of receiving information from the Capacity Provider
3.3.4	Carry out a Desk Based Metering Test		Y	Within 10 Working Days of 3.3.3
3.3.5	Submit the Desk Based Metering Test Results to the MSP		Y	Within 2 Working Days of completing 3.3.4

### 3.4 Notifications

The Capacity Provider will notify the MSP that they require a Metering Test. This request will state the Metering Configuration Solution the CMU is to be tested against.

MSP will inform the MA of a site requiring a Metering Test and the Metering Configuration Solution used.

The MSP will request, from the Capacity Provider, the information needed to conduct the Metering Test where a Metering Statement hasn't been submitted as part of the Metering Test request. The

information to be provided is as per the Metering Statement in Schedule 6 of the Capacity Market (Amendment) Rules<sup>7</sup>

Following completion of the desk based Metering Test the MA will inform MSP of the result. MSP will either issue a Metering Test Certificate where the Metering Test has been passed or inform the Capacity Provider and ESC of a non-compliance where the Metering Test has been failed.

If the Metering Test has identified a non-compliance which is deemed to be currently affecting the quality of data for Settlement purposes (equivalent to a Category 1 Non Compliance as set out in BSCP27) it will be reported to the Balancing and Settlement Code Company (BSCCo) by the MSP.

### 3.5 Metering Test Process

The high level Metering Test Process is shown in Figure 1.

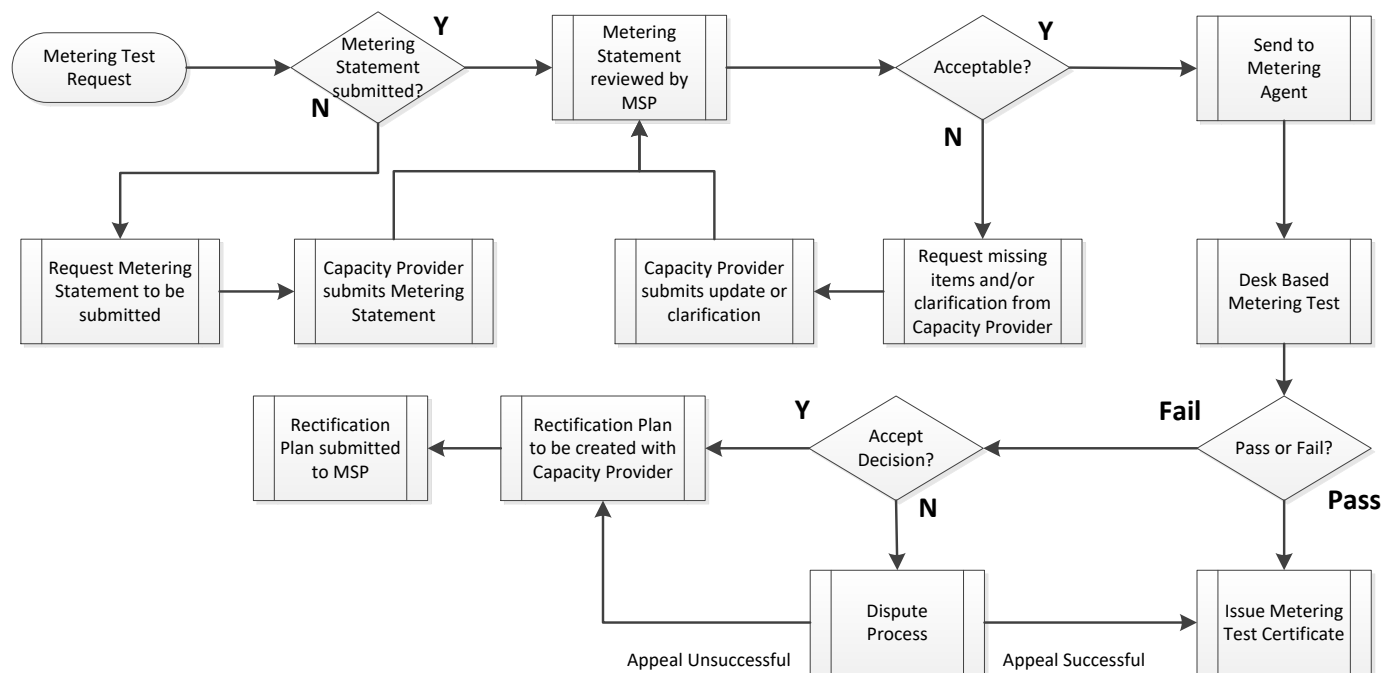


Figure 1: High level Metering Test Process.

The process map below illustrates the Metering Test rectification plan process. Where the result is a fail the process is defined in the previous diagram from the fail path after the desk based Metering Test process box.

<sup>7</sup> <https://www.gov.uk/government/publications/capacity-market-rules>

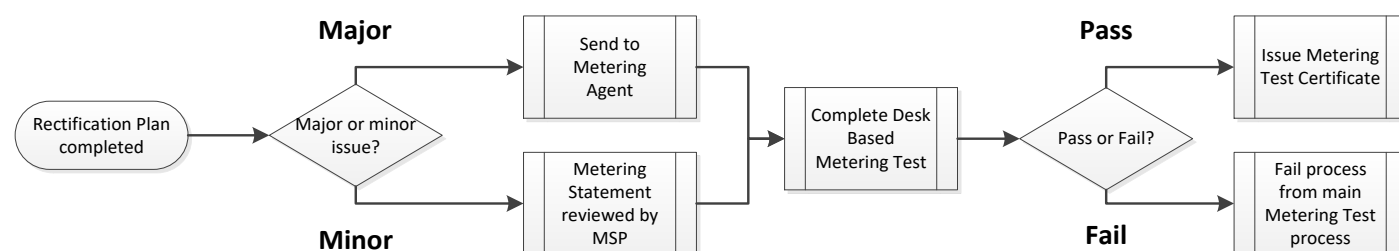


Figure 2: Metering Test Rectification Plan Process.

In the event of a failed Metering Test the Capacity Provider is required to either, submit and agree with the MSP a Rectification Plan that details the actions necessary to resolve the failure(s), or dispute the failure(s).

If the information provided in the Rectification Plan allows the MSP to determine compliance, then a Metering Test Certificate may be issued by the MSP.

### 3.6 Metering Statement

It is the responsibility of the Capacity Provider to provide all the Metering Statement Information required for the Metering Test.

The information required to be submitted to the MSP to complete the Metering Test is contained in Schedule 6 of the Capacity Market (Amendment) Rules<sup>8</sup>.

The MSP will request the information needed to conduct the Metering Test where a Metering Statement hasn't been submitted as part of the Metering Test request. Appendix 4 has the required information for the Metering Statement. Guidance on completing the Metering Statement<sup>9</sup> can be found on the EMRS website.

Every item in Schedule 6 is not necessarily applicable to the Metering Configuration Solution. The following Tables give guidance on what is required for a Metering Configuration Solution:

- Settlement Metering (Central Volume Allocation (CVA) or Supplier Volume Allocation (SVA) Metering System) – Table 4
- Bespoke Solution Metering System – Table 5 and
- Balancing Services Metering System –Table 6

Table 4: BSC Metering Configuration Solution.

BSC Metering Configuration Solution		
Always Required	Not Always Required	Condition
(a), (b), (c), (e), (f), (g), (h), (i), (j), (l), (m), (n), (r)	(k)	Only if they have been submitted as part of an approved and current metering dispensation

<sup>8</sup> <https://www.gov.uk/government/publications/capacity-market-rules>

<sup>9</sup> <https://www.emrsettlement.co.uk/publications/guidance/>

BSC Metering Configuration Solution		
	(o)	Only if the Meters have been compensated for the losses associated with the Measurement Transformer Errors or Power Transformer Losses; in the case of the latter only if they have been submitted as part of an approved and current metering dispensation
	(p)	Only if they have been applied as part of an approved and current metering dispensation
	(q)	Only if applied by Private Network operator

Table 5: Bespoke Metering Configuration Solution.

Bespoke Metering Configuration Solution		
Always Required	Not Always Required	Condition
(a), (b), (c), (e), (f), (g), (h), (i), (j), (l), (m), (n), (r)	(o)	Only if the Meters have been compensated for the losses associated with the Measurement Transformer Errors

Table 6: Balancing Services Metering Configuration Solution.

Balancing Services Metering Configuration Solution		
Always Required	Not Always Required	Condition
(a), (b), (d), (e), (f), (g), (i), (j), (l), (m), (n), (r)	(h)	Only in FCDM unless National Grid agree to it not being required

All single line diagrams (SLD) must show the location of the Metering System; this includes the Instrument Transformers (Current Transformers (CT) and Voltage Transformers (VT)). All CMU components should be shown on the diagram. A basic example is illustrated in Figure 3 in Appendix

1. It is not necessary for SLDs to include any protection, control and instrumentation equipment but if it does then the Metering Equipment must be clearly distinguishable.

The location of the CTs and VTs should be at the Meter Point for the CMU as defined in the Capacity Market Rules which is in a position to measure the net Metered Volume of the CMU. It would be expected to see the ratio, accuracy class and rated burden of the Instrument Transformers on the SLD. If any of the Instrument Transformers are multi-ratio the ratio used for the metering should be highlighted.

An example of an Electrical Schematic Diagram is shown in Figure 4 in Appendix 1.

### 3.7 Metering Test

The Metering Test is a check that the Metering System is compliant with the relevant governing documents and the Capacity Market Rules.

The relevant governing documents are:

- 1) BSC Metering sites are required to meet the standards in the BSC<sup>10</sup> Section L and the applicable Code of Practice (CoP)<sup>11</sup>, depending on the capacity of the circuit (or demand in the case of CoP 5). The obligations for calibration, testing and commissioning are in CoP 4. The applicable CoP is the one relevant at the time of first registration in Settlement. Any approved and current Metering Dispensations will be taken into account.
- 2) Bespoke Solution sites are required to meet the standards in the Bespoke Technical Requirements (Schedule 7) of the Capacity Market (Amendment) Rules<sup>12</sup>.
- 3) DSR CMUs that have been part of Short Term Operating Reserve (STOR), Frequency Control by Demand Management (FCDM) and Firm Frequency Response (FFR) and have entered using a Balancing Services Metering Configuration Solution are required to meet the metering standards set by National Grid for Balancing Services. Namely:
  - a. STOR Despatch Procedure version 1.3;
  - b. FCDM – Bilateral agreement between the Generator and System Operator; and
  - c. FFR - Framework agreement or bilateral agreement between the Generator and System Operator.

The Metering Test will check the Metering Statement to confirm that:

1. Nothing is currently affecting the quality of data (Metered Volumes) for EMR Settlement purposes;
2. The Metering Statement has been fully completed;
3. Incorrect accuracy class of Metering Equipment;
4. Metering Equipment not installed at the Meter Point as specified in the Capacity Market Rules;
5. The assessment of overall accuracy is outside the allowed limits;

<sup>10</sup> <http://www.elexon.co.uk/bsc-related-documents/balancing-settlement-code/bsc-sections/>

<sup>11</sup> <https://www.elexon.co.uk/bsc-related-documents/related-documents/codes-of-practice/>

<sup>12</sup> <https://www.gov.uk/government/publications/capacity-market-rules>

6. For non-BSC metered volume submission; the CSV file submitted is of the correct format and can be loaded into the EMR Settlement System.
7. The Metering System (i.e. Meters and Measurement Transformers) has been commissioned;
8. No mismatch in details submitted by the Capacity Provider and held by data collector; and
9. No mismatch in details submitted by the Capacity Provider in different sections of the Metering Statement.

### **3.8 Reporting**

The reporting of Metering Test results will be done using the Capacity Market Testing Report (template in Appendix 3). There will be a separate report for each CMU Component making up the CMU. The report includes site details, an assessment of the overall accuracy, Metering Test result and an area to record non-compliances and observations.

### **3.9 Queries and Appeals**

All queries raised by the Capacity Provider will be to ESC or MSP. Any appeal will be raised by the Capacity Provider and submitted to ESC. The Disputes process is managed by ESC<sup>13</sup>.

### **3.10 Resolving Non-Compliances**

The Capacity Provider is responsible for resolving any non-compliance of the Metering System.

The Capacity Provider would submit and agree a rectification plan with the MSP. The Rectification Plan would be sent to the MA.

The MA would review the rectification plan and confirm it will resolve the outstanding non-compliance(s). If the Capacity Provider completes the rectification plan and sends confirmation to the MSP then the MSP will instruct the MA to perform another Metering Test.

For minor non-compliances the MSP can agree a rectification plan and determine compliance without consultation with the MA.

### **3.11 Metering Test Certificate**

Following the successful completion of the Metering Test process the MSP will issue a Metering Test Certificate to the Capacity Provider. This will include:

- Confirmation that the Metering Test has occurred;
- Details of the metering configuration for each Generating Unit or DSR CMU Component comprised in the CMU; and
- Confirmation that the metering arrangements for each Generating Unit or DSR CMU Component comprised in a CMU constitutes an Approved Metering Solution.

An example of the template can be seen in Appendix 2.

<sup>13</sup> <https://www.lowcarboncontracts.uk/publications/capacity-market-dispute-resolution-0>

## 4. Interface and Timetable Information

### 4.1 Metering Test Request and Metering Statement Submission

The process for requesting a Metering Test.

Ref	Rule or Regulation	When	Action	From	To	Input Information Required	Method
4.1.1	Rule 8.3.3 (c)	After completion of a Metering Assessment	Notify the Capacity Provider that they require a Metering Test	Delivery Body	Capacity Provider		Internal Process
4.1.2	Rule 13.3.2; 13.3.2A 13.2.12D	<p>Following notification in 4.1.1 and by the deadline specified in the Rules (13.3.2A), if applicable;</p> <p>It is recommended at the latest 3 Months prior to the expected start date for a Prospective or Refurbishing CMU;</p> <p>It is recommended at the latest 20 WD prior to the deadline in 13.2.12D</p>	<p>Notify MSP that they require a Metering Test.</p> <p>The Capacity Provider has to specify the metering configuration that each CMU or DSR CMU Component comprised in the CMU is to be tested against.</p> <p>Provide a Metering Statement for the relevant Component(s)</p>	Capacity Provider	MSP	<p>CMU ID;</p> <p>Component IDs;</p> <p>Metering Configuration Solutions (relevant Balancing Services Agreement, where applicable);</p> <p>Metering System Identifiers;</p> <p>Capacity Provider Contact Details (name, address, phone number and email address);</p> <p>List of Components that require a Metering Test;</p> <p>Metering Statement (as per Schedule 6 of the Rules)</p>	Email



Ref	Rule or Regulation	When	Action	From	To	Input Information Required	Method
4.1.3		Within 2 WD of 4.1.2; or receipt of an updated request in 4.1.10	Acknowledge request for a Metering Test	MSP	Capacity Provider	CMU ID	Email
4.1.4	Rule 13.3.1	Within 2 WD of receipt of request in 4.1.2	<p>Validate the request received in 4.1.2</p> <p>If the request is complete and a Metering Statement submitted continue to 4.1.5; or</p> <p>Notify the Capacity Provider the request is incomplete or no Metering Statement has been submitted. Continue to 4.1.9</p>	MSP	Capacity Provider	<p>Metering Test request details;</p> <p>Metering Statement</p> <p>List of issues in Metering Test request</p>	Email
4.1.5	Rule 13.3.1	Within 2 WD of receipt of request in 4.1.2; or receipt of an updated Metering Statement in 4.1.10	<p>Validate the Metering Statement received in 4.1.2</p> <p>If the Metering Statement is complete continue to 4.2.1; or</p> <p>If the Metering Statement is not complete, continue to 4.1.6</p>	MSP		Metering Statement	Internal Process

Ref	Rule or Regulation	When	Action	From	To	Input Information Required	Method
4.1.6		On same WD as 4.1.5 and within 2 WD of receipt of request in 4.1.2	Notify Capacity Provider of issues with Metering Statement	MSP	Capacity Provider	Metering Statement issues	Email
4.1.7	Rule 13.3.2	Within 10 WD of receipt of notification in 4.1.6	<p>Upon receipt of notification in 4.1.6 Capacity Provider should resolve the issue and provide an updated Metering Statement</p> <p>Where an updated Metering Statement cannot be submitted within 10WDs the reasons for this and an estimated submission date should be submitted</p>	Capacity Provider	MSP	<p>Updated Metering Statement <b>OR</b></p> <p>Reasons for Metering Statement not being submitted and an estimated date for submission</p>	Email
4.1.8	Rule 13.3.2	Same WD as 4.1.7	<p>Where an updated Metering Statement has been provided continue to 4.1.5; <b>OR</b></p> <p>Where an updated Metering Statement cannot be submitted <b>END PROCESS</b></p>				

Ref	Rule or Regulation	When	Action	From	To	Input Information Required	Method
4.1.9	Rule 13.3.1	Within 10 WD of receipt of notification in 4.1.4	<p>Upon receipt of notification in 4.1.4 Capacity Provider should resolve the issue and/or provide a Metering Statement</p> <p>Where a Metering Statement cannot be submitted within 10WDs the reasons for this and an estimated submission date should be submitted</p>	Capacity Provider	MSP	<p>Updated Metering Test Request; and/or</p> <p>Metering Statement. <b>OR</b></p> <p>Reasons for Metering Statement not being submitted and an estimated date for submission</p>	Email
4.1.10	Rule 13.3.1	Same WD as 4.1.9	<p>Where an updated Metering Test Request has been provided continue to 4.1.3; <b>OR</b></p> <p>Where only a Metering Statement had to be provided and has been received continue to 4.1.5; <b>OR</b></p> <p>Where an updated Metering Statement cannot be submitted <b>END PROCESS</b></p>				

## 4.2 Desk Based Metering Test

The MA will receive a Metering Statement from the MSP and perform the desk based Metering Test.

Ref	Rule or Regulation	When	Action	From	To	Input Information Required	Method
4.2.1	13.3.1	Following 4.1.5 and same WD	Send Metering Statement and Metering Test request details	MSP	MA	CMU ID; Metering Configuration Solutions (relevant Balancing Services Agreement, where applicable); List of Components that require a Metering Test; Metering Statement (as per Schedule 6 of the Rules)	Email or other agreed method
4.2.2	13.3.1	Following 4.2.1 or 4.3.10 and within 10 WD	Complete Metering Test	MA		As per 4.2.1	Internal Process
4.2.3		Following 4.2.2 and within 2 WD	Notify MSP of results	MA	MSP	Metering Test Results (Appendix 3)	Email
4.2.4		Same WD as 4.2.3	If the Metering Test has been passed continue to 4.4; <b>or</b> If the Metering Test has been failed continue to 4.3	MSP		Metering Test Results (Appendix 3)	Internal Process

### 4.3 Non-compliance / Rectification Plan

The Metering Test has been failed and the Capacity Provider has to either accept the decision and rectify the non-compliance or appeal the decision.

Ref	Rule or Regulation	When	Action	From	To	Input Information Required	Method
4.3.1	Rule 13.3.6 (b)	Following 4.2.4 and within 2 WD	Notify the Capacity Provider that the Metering Test has been failed; detailing the areas of non-compliance	MSP	Capacity Provider  ESC  Delivery Body	Notification that the Metering Test has been failed  Metering Test Results Report (Appendix 3)	Email
4.3.2		Following 4.3.1 and within 2 WD	If the non-compliance is deemed to be currently affecting the quality of data for Settlement purposes notify BSCCo of SVA or CVA Metering System	MSP	BSCCo	CMU ID with corresponding MPAN/MSID relating to the applicable SVA or CVA Metering System;  Nature of the non-compliance	Email

Ref	Rule or Regulation	When	Action	From	To	Input Information Required	Method
4.3.3	Rule 13.3.7	Within 5 WD after receipt of notification of 4.3.1	<p>Notify whether or not it accepts the Metering Test failure:</p> <p>If the Capacity Provider accepts the decision continue to 4.3.4; <b>or</b></p> <p>If the Capacity Provider does not accept the decision continue to EMR Metering Disputes Resolution Procedure working practice Section 3.6</p> <p>If Metering Test Fail upheld continue to 4.3.4; <b>or</b></p> <p>If Metering Test Fail ruled invalid continue to 4.4</p>	Capacity Provider	MSP	Notification of whether decision accepted	Email

Ref	Rule or Regulation	When	Action	From	To	Input Information Required	Method
4.3.4	Rule 13.3.8 (a)	Within 15 WD after receipt of notification in 4.3.1, or following resolution meeting or Expert Determination Procedure in EMR Metering Disputes Resolution Procedure working practice, as applicable	Submit a rectification plan to correct the Metering Test failure	Capacity Provider	MSP	Rectification Plan	Email
4.3.5	Rule 13.3.8 (a)	Following 4.3.4 or 4.3.7, as applicable, and within 2 WD	Evaluate Rectification Plan (in conjunction with MA if required):  If acceptable continue to 4.3.8  If not acceptable continue to 4.3.6	MSP		Rectification Plan	Internal Process
4.3.6		Following 4.3.5 and within 1 WD	Notification of areas of the Rectification Plan that will not resolve the non-compliance	MSP	Capacity Provider	Details of problem with Rectification Plan	Email

Ref	Rule or Regulation	When	Action	From	To	Input Information Required	Method
4.3.7		Following 4.3.6 and within 5 WD	Submit a revised rectification plan to correct the Metering Test failure. Continue to 4.3.5	Capacity Provider	MSP	Rectification Plan	Email
4.3.8	Rule 13.3.8 (b)	Following 4.3.5 or 4.3.7 as applicable, or following resolution meeting or Expert Determination Procedure in EMR Metering Disputes Resolution Procedure working practice, as applicable	Implement the rectification plan  Plan must be completed to allow enough time for the Metering Test process to be completed by the relevant deadline in Rule 8.3.3 (e) or 8.3.4 (h) (ii) or 13.2.12D as applicable	Capacity Provider		Rectification Plan	Internal Process
4.3.9	Rule 13.3.8 (C)	Within 5 WD after completion of 4.3.8	Notification of the completion of all steps identified in the rectification plan	Capacity Provider	MSP	Notification of the completion of the rectification plan	Email
4.3.10	Rule 13.3.8	Following notification in 4.3.9	Upon receipt of notification in 4.3.9 of the completion of the rectification plan instruct MA to carry out another Metering Test, continue to 4.2.2	MSP	MA	CMU ID and updated Metering Statement	Email or other agreed method



## 4.4 Metering Test Certificate

Following the successful completion of the Metering Test process a Metering Test certificate will be issued to the Capacity Provider.

Ref	Rule or Regulation	When	Action	From	To	Input Information Required	Method
4.4.1	Rule 13.3.6 (a)	Within 2 WD of completion of 4.2.4,	<p>Issue a Metering Test Certificate</p> <p>This will include:</p> <p>Confirmation that a Metering Test has occurred;</p> <p>Detail the metering configuration for each Generating Unit or DSR CMU Component comprised in the CMU; and</p> <p>Confirm that the metering arrangements are an Approved Metering Solution.</p> <p>Either a complete Metering Test Certificate or a sampling Metering Test Certificate will be completed, as applicable</p>	MSP	Capacity Provider	<p>Metering Test Results Report (Appendix 3)</p> <p>CMU ID;</p> <p>Date of Test;</p> <p>Metering Configuration;</p> <p>CMU Component ID; and</p> <p>Sampling or non-sampling method.</p> <p>(See example in Appendix 2)</p>	Email
4.4.2		Following 4.4.1 and same WD	Notify that Metering Test has been passed	MSP	ESC Delivery Body	Metering Test Certificate (Appendix 2)	Email

Ref	Rule or Regulation	When	Action	From	To	Input Information Required	Method
4.4.3	Rule 8.3.3 (d) & (e) or 13.2.12D as applicable	Following 4.4.1 and by deadline in Rule 8.3.3 (e) or 8.3.4 (h) (ii) or 13.2.12D as applicable	Send Metering Test Certificate.	Capacity Provider	Delivery Body	Metering Test Certificate (Appendix 2)	Upload to Delivery Body Portal
			<b>END PROCESS</b>				Email

## 5. Contact Information

For all queries please contact:

Contact Organisation	Contact
Settlement Services Provider (EMR Settlement Ltd)	Telephone: 020 7380 4333 Email: <a href="mailto:contact@emrsettlement.co.uk">contact@emrsettlement.co.uk</a>
Electricity Settlements Company (ESC)	Telephone: 0208 187 9308 Email: <a href="mailto:info@electricitysettlementscompany.uk">info@electricitysettlementscompany.uk</a>

## 6. Acronyms and Definitions

A list of acronyms and definitions can be found in the 'Acronyms and Definition' document on the EMRS website<sup>14</sup>.

<sup>14</sup> <https://www.emrsettlement.co.uk/glossary/>

## 7. Appendices

### 7.1 Appendix 1 - Single Line Diagram Example

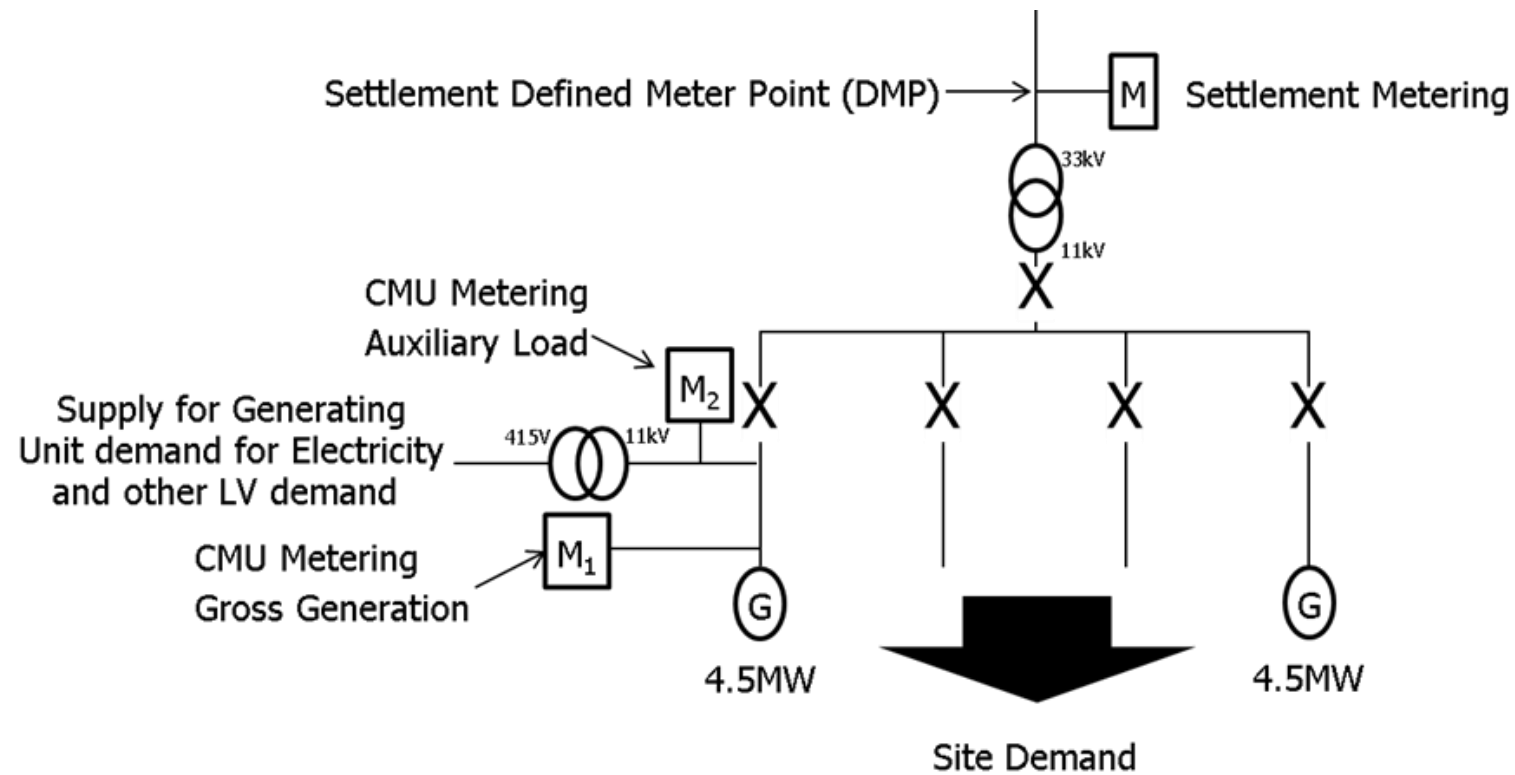


Figure 3: Example of Single Line Diagram (Bespoke Metering Configuration Solution).

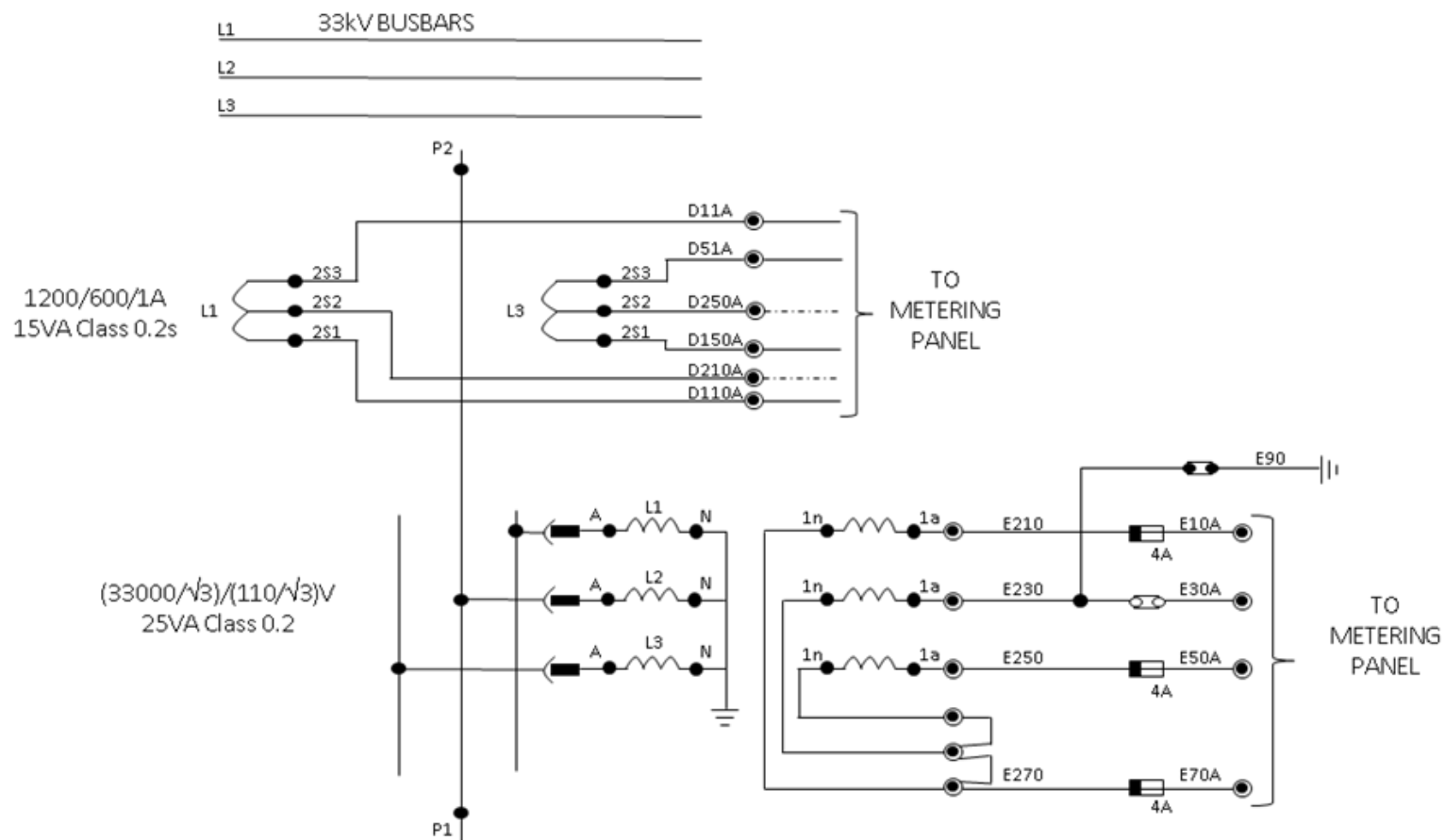


Figure 4: Example of an Electrical Schematic Diagram.

## 7.2 Appendix 2 - Metering Test Certificate Template

Certificate Number 2016/000001



# METERING TEST CERTIFICATE

This is a Metering Test Certificate issued under Rule 13.3.6 of the Capacity Market Rules 2014, as amended (the “Rules”). This Metering Test Certificate is issued by EMR Settlement Limited (“EMRS”), the settlement service provider appointed by Electricity Settlement Company Limited (“ESC”), on behalf of ESC. Terms and expression defined in or incorporated into the Rules have the same meaning when used in this certificate.

A Metering Test has been conducted in accordance with Rule 13.3.1 by EMRS on behalf of ESC. Details of the Metering Test are set out below.

Capacity Provider Name: ABCD Limited

Date of Metering Test: 26 July 2016

CMU Name: ABCD DSR

CMU ID: ABCD

CMU Type: Generating CMU comprised of Generating Units

Metering Configuration: Supplier Settlement and Bespoke

Component ID:	Metering Configuration:	Component ID:	Metering Configuration:	Component ID:	Metering Configuration:
1234567890000	Supplier Settlement				
1434567890000	Supplier Settlement				
ABCD_Component1	Bespoke				
ABCD_Component2	Bespoke				

The metering arrangements for each Generating Unit comprised in the CMU constitutes an Approved Metering Solution.

Signed for and on behalf of:  
EMR Settlement Limited

Dated: 28 July 2016



### 7.3 Appendix 3 - Testing Report Template

## Capacity Market Testing Report

CMU ID: \_\_\_\_\_

CMU Name: \_\_\_\_\_

CMU Component ID: \_\_\_\_\_

**Metering Configuration Solution:**

Type of Test: Metering Test Desk Based / Metering Test Onsite / Site Audit\*

Estimate of Overall Accuracy of Metering System: %

Metering System Compliant: YES / NO\*

(\* Delete as appropriate)

### Details of Non-Compliance

### Details of Observations

Date of Test:                      /           /

Name of person completing test: \_\_\_\_\_

## 7.4 Appendix 4 - Metering Statement Required Information

### SCHEDULE 6: METERING STATEMENT

A Capacity Provider must provide a detailed description for each CMU component which must include, as applicable, the following information:

**(a) Single Line Diagram**

To determine that the Metering System is at the Meter Point and to measure the Metered Volume of the CMU. The single line diagram must show all CMU components and all connections to the Total System, as applicable.

**(b) CMU Site details** (to include the following):

- (i) CMU ID;
- (ii) Circuit name (if applicable);
- (iii) Confirmation that the CMU is either a Generating CMU or a Demand Side Response CMU;
- (iv) Type of site;
- (v) Site address;
- (vi) Site contact details; and
- (vii) Arrangements for Site Audit
- (viii) Type of Metering Configuration Solution used and where this is Balancing Services the relevant Balancing Services Agreement.
- (ix) The rated output of any Generating Unit (kW or MW) or the rated capacity of the circuit (kVA or MVA), as applicable.

**(c) Metering Technical details** (to include the following):

- (i) MPANs or MSIDs and BMU IDs where applicable that are part of the CMU;
- (ii) Meter serial numbers;
- (iii) Outstation ID;
- (iv) number of channels;
- (v) measurement quantity ID;
- (vi) Meter and pulse multipliers;
- (viii) Current and voltage transformer ratios applied;
- (ix) Communications numbers and confirm method for remote communication;
- (x) Metering dispensations for the site (if applicable);
- (xi) Complex Site Supplementary Form (if applicable) In respect of an SMRS registered CMU the D0268 Half Hourly Meters Technical Details should be submitted; in respect of a CMRS CMU the BSCP20/4.3a, b and c Registration of Meter Technical Details should be submitted: in respect of a Metering Site using the Bespoke Metering Configuration Solution the Key Meter Technical Details form should be submitted; and
- (xii) If the CMU is identical to the BMU, the completed Aggregation Rule Form BSCP75/4.2. If the CMU is different from the BMU, the Capacity Provider must provide details of the metered data values to be aggregated to the appropriate Metered Volume for the CMU.
- (xiii) Where multiple Metering Systems are used the Aggregation Rule<sup>3</sup> for the CMU, Generating Unit or DSR CMU Component should be provided unless provided under (c)(xi) or (xii)

<sup>3</sup> For the purposes of the Schedule, 'the Aggregation Rule' refers to the formula set out by the CM Settlement Body to determine the Metered Volume, in relation to any Settlement Period, where more than one Metering System is being used for a CMU, DSR CMU Component or Generating Unit at a single Metering Site.



**(d) Non Half Hourly Meter Technical Details**

In respect of a CMU not using a Meter that measures on a half hourly basis, the Capacity Provider must provide the following metering information:

- (i) Technical specification of the device providing instantaneous metering values;
- (ii) A calibration test certificate for the device listed in paragraph (d) (i) above or satisfy the requirement of (i) (ii);
- (iii) Ratios of any connected Instrument Transformers;
- (iv) Details of the Installation; and
- (v) Confirmation of the method used of converting to half hourly data to submit to EMRS.

**(e) Data Provision**

Capacity Providers must confirm:

- (i) the method it proposes to use to submit data to EMRS; and
- (ii) if applicable, the contact details of the relevant Central Data Collection Agency (CDCA), Half Hourly Data Aggregators (HHDA) or Half Hourly Data Collectors (HHDC) to enable the Metering Agent to confirm the Metering Technical details provided by the Capacity Provider at paragraph (c) above, match those held by the CDCA, HHDA or HHDC.
- (iii) Where data is submitted using the method set out in 14.2.7 as an example of the comma separated value file in the format specified by the CM Settlement Body must be provided.

**(f) Time Synchronisation**

Capacity Providers must provide a statement detailing how the time of the meters or Settlement Installation used is synchronised to UTC.

**(g) Security**

Capacity Providers must submit a detailed description of their security arrangements, including, where applicable, details of any sealed or padlocked hardware and password protected IT software.

**(h) Testing Facilities**

Capacity Providers must submit a detailed description of the testing facilities and fusing arrangements for the Meters.

**(i) Installation Date**

Capacity Providers must confirm the date that the Metering System was installed and commissioned to enable the Metering Agent to verify compliance with the relevant Governing Documents, as applicable, at that time. If the date of installation and commissioning is unknown, the Capacity Provider must undertake a new commissioning test.

**(j) Instrument Transformers**

Capacity Providers must provide evidence to enable the CM Settlement Body to determine the relevant transformers are of the correct accuracy class and that any errors are within the allowed limits of that class. The evidence may be either;

- (i) The manufacturer's test certificates; **or**
- (ii) Technical information from the manufacturer confirming the ratio(s), rated burden, accuracy class and the errors for the same type and configuration of Instrument Transformers as that installed. Relevant technical information should include, as applicable;
  - a. The manufacturer's test certificate for an equivalent transformer; **or**
  - b. An error from the National Measurement Transformer Database; **or**
  - c. The range of errors from the design characteristics of the transformer as specified in the design specification of a transformer.

**(k) Power Transformers**

Capacity Providers must submit a copy of the evidence of the Power Transformer losses used as part of their approved dispensation which accounts for transformer losses where the installed metering is not at the Defined Metering Point and there is a Power Transformer between the two points. This evidence should include, as applicable;

- (i) The manufacturer's Power Transformer Test Certificate for the installed Power Transformer; **or**
- (ii) The manufacturer's Power Transformer Test Certificate for a Power Transformer of the same type as that installed; **or**
- (iii) An average figure approved for use under the dispensation.

**(l) Meters**

Capacity Providers must provide either:

- (i) A Manufacturers test certificate; **or**
- (ii) Technical information from the manufacturer confirming the typical errors of the device; **or**
- (iii) A calibration test certificate tested at the calibration testing points set out in the table below performed by a third party (be produced using standards verified by the National Physical Laboratory (NPL), or a calibration laboratory that has been accredited by the United Kingdom Accreditation Service (UKAS), or a similarly accredited international body and include an overall accuracy and uncertainty of measurement statement for the relevant calibration equipment, where uncertainty is determined in accordance with the current UKAS Directive M3003).
- (iv) For non-integral Outstation meters, a calibration test certificate that confirms the errors of the Meter.

Calibration testing points for Meter Types 1 (Class 0.2s), 2 (Class 0.5s), 3 (Class 1) and 4 (Class 2)

Test Point	Active Meter		
Value of current (I)	Power Factor (Cos $\phi$ )		
	Unity	0.5 Inductive	0.8 Capacitive*
0.01 $I_n$	X		
0.02 $I_n$		X	X
0.05 $I_n$	X (3), Y****		
0.1 $I_n$		X	X
1.0 $I_n$ ***	X (2), Y (5)	X (4)	X
1.0 $I_{max}$ or 1.2 $I_n$ or 1.5 $I_n$ or 2.0 $I_n$ **	X (1)	X	X

**Notes:**

These tests shall be carried out for input electricity and output electricity directions for a given metering point. If the same measuring element is used for both input electricity and output electricity, one additional test point only (at "1.0 In", Unity Power Factor, balanced) is required in the reverse direction.

X = all elements combined.

Y = each element on its own.

X, Y = tests should be carried out both on all elements combined, and each element on its own.

\* = tests at 0.5 capacitive Power Factor is acceptable.

\*\* = determined by overload capacity of circuit. If unspecified, test at "1.0 I<sub>max</sub>".

\*\*\* = Tests points for Class 1 (Type 3) Meter only

\*\*\*\* = X and Y for Class 0.2s (Type 1) and Class 0.5s (Type 2) Meter; X only for Class 1 (Type 3) Meter

Numbers in brackets identify, for reference only, those tests specified in Statutory Instruments 1998 No. 1566 Schedule 1, Table 2 and Schedule 3, Table 2.

**(m) Instrument Transformer Burdens**

Capacity Providers must provide either:

- (i) A measurement of the burden connected to the current and voltage transformer; **or**
- (ii) A calculated estimate of the burden connected to the current and voltage transformer so as to determine that these connected burdens are less than the rated burden of the transformer.

In the case of (ii), a Capacity Provider must also submit a justification as to why it was not possible to provide a measurement of the burden connected to the current and voltage transformer.

**(n) Commissioning requirements**

Capacity Providers must provide a copy of the commissioning paperwork for the Metering System which must include Instrument transformer commissioning (by way of example ratio and polarity tests).

If a Capacity Provider is unable to provide the information above, the following information must be submitted to establish primary load (in order of preference):

- (i) the Demand (derived from independently measured primary values) and the Meter's instantaneous Demand reading for the same period; **or**

- (ii) the Demand (derived from independently measured secondary values where the primary/secondary ratios can be established) and shall be compared to the Demand reading for the same period; **or**
- (iii) Where appropriate and in consultation with the Metering Agent, an alternative measurement device shall be used for comparison with that of the Meter.
- (iv) Where appropriate and in consultation with the CM Settlement Body, an alternative method using;
  - a. Photographic evidence of the Instrument Transformer rating plates and Meter programmed ratios;
  - b. Photographic evidence of the Instrument Transformer rating plates and a download of the Meter programmed ratios using the Meter manufacturer's software;
  - c. For multi-ratio Instrument Transformers photographic evidence of the Instrument Transformer secondary wiring, the Instrument Transformer rating plates and the Meter programmed ratios (or a download of the Meter programmed ratios using the Meter manufacturer's software); **or**
  - d. For multi-ratio Instrument Transformers photographic evidence of the Instrument Transformer secondary wiring, the Instrument Transformer calibration test certificates and the Meter programmed ratios (or a download of the Meter programmed ratios using the Meter manufacturer's software);

Shall be used to confirm the Instrument Transformers are configured and operating correctly.

Capacity Providers must also provide:

- (i) Meter commissioning tests; and
- (ii) Meter proving tests

If a Capacity Provider is unable to provide the information above, the meter commissioning tests and proving tests must be completed again.

**(o) Transformer Loss Compensations**

In the event that transformer error or loss compensation has been applied to the metering, a Capacity Provider must provide evidence of the compensation calculation. The evidence provided can be for the measurement of transformer errors only or additionally, in the case of a Metering Dispensation, where the installed metering is not at the Defined Metering Point and there is a power transformer between the two points, Power Transformer Losses. The evidence should include as a minimum the compensation figures programmed into the Meter or incorporated into the Aggregation Rule (as applicable).

**(p) Cable and Overhead Line Loss Compensations**

In the event that cable and overhead line loss compensation has been applied to the metering, a Capacity Provider must provide evidence of the compensation calculation. The evidence should include as a minimum the compensation figures programmed into the Meter or incorporated into the Aggregation Rule (as applicable).

**(q) Electrical Losses Factor**

Only applicable to the Unlicensed Network a CMU is operating on if the site the CMU is part of is a Third Party Access site; a Capacity Provider operating on an Unlicensed Network must provide, where applicable, a copy of the methodology statement justifying the Unlicensed Network operator's calculations of electrical losses from the CMU Component connection point to the Boundary Point of the Unlicensed Network with the Total System. The evidence should include as a minimum the compensation figures programmed into the Meter or incorporated into the Aggregation Rule (as applicable).

**(r) Declaration**

The Directors of the Capacity Provider must certify that the information contained in and enclosed with the Metering Statement, is, at the date of submission and to the best of their knowledge, information and belief, true, complete and accurate in all material respects.



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