WP134 – CFD Metering Technical Assurance

EMRS Working Practice

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1. Introduction

A new Government scheme has been created to encourage low carbon energy generation. This will be part of Electricity Market Reform (EMR). The low carbon side of the scheme is called Contracts for Difference (CFD) and will guarantee a price per MWh for generation. The scheme will be managed by the CFD Counterparty; the company performing this role is the Low Carbon Contracts Company (LCCC).

The Metering System used by a generator in will be subject to a technical assurance process. The LCCC has the right to carry out an onsite audit on the Facility Metering Equipment. The LCCC has outsourced this metering assurance to a Management Services Provider (MSP).

1.1 Scope and Purpose

This document has been written by EMR Settlement Ltd (EMRS) on behalf of the Low Carbon Contracts Company (LCCC) for Contracts for Difference (CFD). It covers procedures for the Management Services Provider (MSP) and Metering Agent (MA) roles. The MSP role is being fulfilled by EMRS for the 2015/16 financial year. The MSP and MA roles will be subject to a LCCC procurement exercise for subsequent financial years. If you have any questions on the MSP and MA roles please contact LCCC.

1.2 Main Users and Responsibilities

Table 1: Main Users and Responsibilities

Role	Responsibilities
CFD Generator	To provide required information on the Metering System and arrange site access.
Low Carbon Contracts Company Ltd (LCCC)	To arrange a Service Provider to manage the metering assurance process. Notify CFD Generator of results of non-compliance.
Management Services Provider	Service Provider who will perform the management of the Metering Assurance Process on behalf of the LCCC. Arrange Metering Agent to perform audits and send results to the CFD Generator.
Metering Agent	Service Provider who will perform the onsite testing and analysis of technical specifications and test results on behalf of the Management Services Provider.

1.3 Associated Documents

This working practice should be read in conjunction with the following documents:

- CFD Standard Terms and Conditions[1] and all subsequent amendments
- CFD Agreement[1] and all subsequent amendments
- Private Network CFD Agreement[1] and all subsequent amendments
- BSCP27 – Technical Assurance of Half Hourly Metering Systems for Settlement Purposes[2]
- Working Practice WP198 EMR Site Testing Volumes and Selection Process[3]
- Working Practice WP133 EMR Metering Disputes Resolution Procedure[3]

2. Background

The MSP will appoint a suitably qualified agent to check compliance to the technical specifications and perform an onsite audit of the Facility Metering Equipment. This working practice is also relevant to that nominated representative of the MSP; the Metering Agent (MA).

In the CFD Agreement the Generator is referred to as the Facility and the Metering System used to measure net Metered Volume is the Facility Metering Equipment.

The Metering Technical Assurance process requires that a number of onsite audits are carried out to provide assurance that the Metered Volumes submitted to the EMR Settlement Ltd (EMRS) are accurate. EMRS are performing the settlement role on behalf of the LCCC.

Assurance of the Metering Systems in CFD is assessed by analysing the audit results from CFD Generators. All Generators participating in CFD will be split into different risk categories. The number of onsite audits performed for each category will be determined by the net significance of the risk for that category. The risk categories in CFD are:

- CMRS/SMRS sites; and
- CFD Generators on Private Networks;

The Metering Test Assurance Framework is based on the existing Balancing and Settlement Code (BSC) Performance Assurance Framework (PAF) and an additional CFD Assurance Framework. This CFD Assurance Framework is for risks which are specific to CFD Generators on a Private Network and any specific risks associated with CFD Generators that are not covered by the BSC PAF.

For a CFD Generator on a Private Network there will be an onsite audit within 3 months of the generation Start Date, irrelevant of the MA witnessing the initial Commissioning and Proving Tests. This is to provide added assurance that the Metered Volumes are correct as the generator is not subject to any of the requirements and validation in the BSC.

A CFD Generator on a Private Network will be subject to regular onsite audits thereafter. These will occur every 3 to 5 years for the duration of the CFD Agreement. This will be up to a maximum of three subsequent audits with an audit conducted in the last year of the CFD Agreement.

The MSP will determine the sites to be audited and will inform the MA. The MA will be responsible for requesting information from the generator, arranging and conducting the onsite audit.

The Metering Technical Assurance process is in two stages.

Stage 1: Pre onsite audit the required information will be requested and validated against the BSC or Private Network Metering Operational Framework (MOF) and Technical System Requirements (TSR); and

Stage 2: The onsite audit will confirm:

[1] https://www.gov.uk/government/publications/contracts-for-difference-standard-terms-and-conditions
[2] https://www.elexon.co.uk/bsc-related-documents/related-documents/bscps/
[3] https://emrsettlement.co.uk/publications/working-practices/

- the installed assets match the submitted details;
- the electrical schematic diagram accurately indicates the Defined Metering Point (DMP);
- perform tests to verify the energy recorded by the Facility Metering is accurate and consistent with the primary energy; and
- it will also confirm the method of data submission accurately passes on Metered Volumes to EMRS.

For a CFD Generator operating on a Private Network most of this required information will have been submitted as part of the Operational Further Conditions Precedent in the Private Network Agreement (Schedule 1 Part B 2.1)

If any faults, issues with data or changes to the Metering System occur a targeted audit for any applicable CFD Generator can occur at any time.

2.1 Information Required

To be able to determine if a CFD Generator has compliant Facility Metering the MA will require information about the Metering System:

- Electrical Schematic Diagram – To determine whether the Metering Equipment is at the DMP and is measuring the net Metered Volume of the Facility. This diagram should show the location of the Current Transformers (CTs) and Voltage Transformers (VTs)[4] connected to the Meters, all CFD Generator metered points and all connections to the Total System (or Private Network, as applicable);
- CFD Generator Site Details – CFD ID, circuit name (if applicable), type of site (e.g. CMRS, SMRS, Private Network), site address, site contact details, arrangements for site visit (e.g. induction details, Risk Assessment & Method Statement required);
- Meter Technical Details – This should include relevant Meter Point Administration Numbers (MPANs)/Metering Systems IDs (MSIDs), Meter serial numbers, Outstation ID, number of channels, measurement quantity ID, Meter and pulse multipliers, CT and VT ratios applied, communications numbers and method for remote communication, any applicable BSC Metering Dispensations for the site, any applicable Complex Site Supplementary Form, Aggregation Rule (BSCP75/4.2 form).
    - For a Supplier Meter Registration Service (SMRS) registered CFD Generator this should be the Data Transfer Network flow ref: D0268 'Half Hourly Meter Technical Details', for a Central Meter Registration Service (CMRS) registered CFD Generator this should be the BSCP20/4.3a, b and c forms, and for a Private Network site the Key Meter Technical Details form;
- Data Provision – The method the CFD Generator is using to submit half hourly data to EMRS (e.g. via Balancing & Settlement Code Company (BSCCo), via Data Collector (DC) or self-submission using a defined file format). The contact details of the relevant DC to confirm Metering Technical Details they have match those submitted by the CFD Generator;
- Time Synchronisation – For Private Network sites a statement detailing how the time of the meters is synchronised to UTC. In instances where the meters are not regularly communicated to by a DC;
- Security – A description of the security arrangements. Any device used as part of the Facility Metering Equipment should be secure. This will be sealed and/or padlocked for Metering Equipment and password protection for software and computers used in the Metering System;
- Testing Facilities – A description of the testing terminal block facilities for the Meters;
- Installation Date – The date that the Metering System was installed and commissioned so compliance with the relevant Code of Practice (or Private Network Agreement, as applicable)

[4] CTs and VTs are collectively referred to as Measurement Transformers

at that time can be verified. This may be two separate dates for Measurement Transformers and Meters;

- Measurement Transformers – The CT and VT manufacturers test certificates for the CTs and VTs so as to determine they are of the correct accuracy class and the errors are within the allowed limits of that accuracy class. If no test certificates are available a photograph of the transformer rating plates shall be submitted clearly showing the ratio, burden, accuracy class and serial number of the transformers;
- Power Transformers – Where the Actual Metering Point (the location of the CTs and VTs) is not at the Defined Metering Point and there is a power transformer between the two points. The electrical losses of the power transformer must be accounted for as part of an approved and current BSC Metering Dispensation. A copy of the manufacturers Power Transformer Test Certificate will also be required;
- Meters – The Meter manufacturers test certificates (or a calibration test certificate tested at the required points performed by a 3rd party) so as to determine that the Meters are of the correct accuracy class and the errors are within the allowed limits of the applicable Code of Practice or Private Network TSR;
- Measurement Transformer Burdens – Evidence of the burden on the CTs and VTs is to be provided which demonstrates that the CT and VT burden limits have not been exceeded. These may be calculated or measured burdens but evidence will be required that justifies the estimation;
- Commissioning – A copy of the commissioning records for the Metering Equipment, including Measurement Transformer commissioning (e.g. ratio and polarity tests), Meter commissioning tests and Meter proving tests;
- Transformer Loss Compensations – If transformer error/loss compensation has been applied to the Meters then evidence of the compensation calculation must be provided. This can be for the Measurement Transformer errors only or in a 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;
- Cable and Overhead Line Loss Compensations – If cable and overhead line loss compensation has been applied to the metering then evidence of the compensation calculation must be provided; and
- Electrical Loss Factor – Only applicable to the Private Network a CFD Generator is operating on if the CFD Generator is a Third Party Access site; the CFD Generator will have a copy of the methodology statement justifying the Private Network Operators calculation of electrical losses from the Facility connection point to the Boundary Point of the Private Network with the Total System.

2.2 Metering Technical Assurance – Stage 1

The first part of the Metering Technical Assurance process will be a desk based exercise analysing the information provided by the CFD Generator. The submitted information will be validated against the BSC or Private Network (MOF & TSR) requirements applicable at the time of installation of the Metering System.

All Meter and Measurement Transformer manufacturer test certificates will be checked for compliance to the required standards. They will also be checked against the Meter Technical Details to verify the serial numbers and ratios match.

An estimation of the overall accuracy of the Metering System will be calculated from the errors recorded on the test certificates and this figure checked against the relevant standard.

The commissioning and proving test records will be checked for compliance and that the serial numbers and ratios match the manufacturers test certificates and the Meter Technical Details.

Any applied compensations to the Meters from transformer loss / error calculations will be validated and verified as being justifiable.

The aggregation rule applied to the Facility Metering Equipment will be verified.

The Electrical Schematic Diagram will be checked to determine that the Metering System is:

- At the DMP and is measuring the Metered Volume of the Facility;
- Shows the location of the Measurement Transformers;
- Any relevant MPAN/MSID (CMRS/SMRS only);
- Meter serial numbers (Private Network only);
- Meter type;
- Communications equipment type;
- Date and time stamped;
- Version number; and
- Certified by a Director of the Facility.

The Electrical Schematic Diagram should show all CFD Generator metered points and all connections to the Total System (or Private Network, as applicable).

2.3 Arrange Site Access

The CFD Generator is required to grant access (or arrange access with the Registrant of the Boundary Point Metering Equipment) to the Facility and the Facility Metering Equipment for audit purposes. This is the Metering Access Right that is part of the conditions in the CFD Agreement. The purpose of the access is to allow the Facility Metering Equipment to be read, inspected, tested and to verify any relevant data.

For CMRS and SMRS Registered Generators audits will be arranged through a Metering Inspection Notice. For Private Network CFD Generators audits can be an unannounced visit or arranged through a Metering Inspection Notice (the latter if an unannounced visit is impractical due to the Facility being unmanned or due to health and safety requirements).

The MA will specify who the suitably qualified person attending site will be. The MA shall at all times comply with the Health & Safety rules of the Generator and is suitably authorised and competent to exercise the Metering Access Right.

2.4 Metering Technical Assurance – Stage 2

The onsite test will determine if the CFD Generator has satisfied the Electrical Schematic Diagram Obligation and the Metering Compliance Obligation as required in the CFD Agreement.

The onsite test will be based on the principles of the Inspection Visits described in Appendix 4 (4.1) of BSCP27[5]. A summary of the Metering Assurance Test is outlined below:

- Confirm that the location of the CTs and VTs are at the DMP of the Facility and that it is in such a position to measure the net Metered Volume of the Facility;
- Confirm from the Electrical Schematic Diagram that no other circuits can impact the net Metered Volume of the Facility and give a false indication of generation; i.e. from another separate connection to the Total System, Private Network or another part of the Facility owner's site;
- Confirm the ratio, class, rated burden and polarity of the Measurement Transformers onsite (if safe to do so). Check the Test Certificates and Commissioning Certificates of the Measurement Transformers;
- Confirm the class, serial number, programmed ratios, programmed compensations and test facilities of the Meters onsite. Check the Test Certificates and Commissioning Certificates of the Meters;

[5] https://www.elexon.co.uk/bsc-related-documents/related-documents/bscps/

- Confirm the overall accuracy at the DMP is within the allowed limits as per the applicable Code of Practice (CoP) or Private Network Agreement TSR, as applicable;
- Confirm the Meter Technical details onsite match those submitted and confirm these with the relevant data collection agency;
- Carry out a Correct Energy Measurement Check (see description in Appendix 2) to determine that the energy recorded by the meter is accurate. If possible compare the instantaneous power recorded by the meter to an independently measured primary indication;
- Carry out a Consumption Data Comparison Check (see description in Appendix 2) to determine that one half hour period recorded by the Meter is consistent with, when read by the DC, HHDC or CDCA, the value held by the relevant data collector. This should be checked after the visit to confirm that the EMRS has received the same value for the period (account for any applied Line Loss Factors (LLF)). This figure should also be compared with the energy measured during the Correct Energy Measurement Check. If the CFD Generator is submitting data by Comma Separated Values (CSV) file this method should be demonstrated and the file submitted to EMRS to confirm the value;
- In a situation where the Meter does not have its time synchronised by a data collection system the CFD Generator will demonstrate how they synchronise the time in the meter;
- On a Private Network the voltage level of the Facility Metering Equipment and the voltage level at the Boundary Point of the Private Network to the Distribution System will be compared against that submitted as the voltage class for use in LLFs; and
- Check the quality of the installation.

If the Metering System is a BSC registered Metering System then the CFD Generator will arrange for the Meter Operator Agent (MOA) to attend, and a suitably authorised representative of the Distribution or Transmission Company to attend for Measurement Transformer access.

For a Private Network a suitably authorised site electrical engineer will be present to allow access to the Meters and Measurement Transformers (if a 3rd party MOA has been used the CFD Generator must arrange for them to be on site).

2.5 Audit Results

The results of all audits will be passed to the MSP who in turn will inform the LCCC. If the audit result is a fail the nature of the breach of the Metering Compliance Obligation and/or the Electrical Schematic Obligation will be detailed. The LCCC will issue the CFD Generator a Metering Breach Notice as per condition 31.2 in the CFD Agreement terms and conditions[6]. It will be up to the CFD Generator to resolve this breach or appeal the decision.

[6] https://www.gov.uk/government/publications/contracts-for-difference-standard-terms-and-conditions

3. Interface and Timetable Information

3.1 Metering Technical Assurance Process

The Management Services Provider (MSP) acting on behalf of the Low Carbon Contracts Company (LCCC) will use a Metering Agent (MA) to carry out the Metering Technical Assurance Process.

Ref	Condition	When	Action	From	To	Input Information Required	Method
3.1.1		After Start Date and at any time	Provide list of sites to be audited as per EMR Site Testing Volumes and Selection Process	MSP	MA	Details of sites for audits (contact details, address)	Email
3.1.2	32.1 (H)	Following 3.1.1 or 3.1.13, as applicable	Request information on the Facility metering system to be able to carry out an audit	MA	Generator	Request information to carry out audit, this list is detailed in Section 3.1. (example of Metering Technical Assurance Notice in Appendix 1)	Email
3.1.3	32.1 (H)	Within 20 WD of request in 3.1.2	Submit the information on the Facility metering system requested in 3.1.2	Generator	MA	Items in Section 3.1.	Email

Ref	Condition	When	Action	From	To	Input Information Required	Method
3.1.4		Within 2 WDs of receipt of information submitted in 3.1.3	Validate the documents received in 3.1.3 If the documents submitted are complete; or following 3.1.5 or 3.1.6 reason for non-submission has been provided, continue to 3.1.14; or Notify the Generator the documents submitted in 3.1.2 are not complete, continue to 3.1.5; or If no documents have been received send a reminder, continue to 3.1.6	MA MA MA	 Generator Generator	Items in Section 3.1. Notify the Generator documents requested in 3.1.2 are not complete Request information to carry out audit, this list is detailed in Section 3.1. (For an example see the Metering Technical Assurance Notice in Appendix 1 – Notification Templates.)	Internal Process Email Email
3.1.5	32.1 (H)	Within 10 WDs of receipt of notification in 3.1.4	Upon receipt of notification in 3.1.4 Generator should send the documents Continue to 3.1.4	Generator	MA	Missing Items	Email

Ref	Condition	When	Action	From	To	Input Information Required	Method
3.1.6	32.1 (H)	Within 10 WDs of receipt of notification in 3.1.4	Upon receipt of notification in 3.1.4 Generator should send the missing documents or state the reason they cannot be submitted	Generator	MA	Required Information; Items in Section 3.1.	Email
3.1.7	32.1 (H)	Following 3.1.6 and for non-compliance notification, if applicable, within 1 WD following deadline in 3.1.6	If information submitted continue to 3.1.4; or If no information submitted notify MSP of non-compliance, continue to 3.1.8	MA	MSP	CFD ID	Email
3.1.8	32.1 (H)	Following 3.1.7 and within 1 WD	Notification of non-compliance	MSP	LCCC	CFD ID	Email
3.1.9	32.1 (H)	Following 3.1.8 and within 2 WD	Inform Generator to participate in the Technical Assurance process and submit required information to MA	LCCC	Generator	CFD ID;	Email

Ref	Condition	When	Action	From	To	Input Information Required	Method
3.1.10	32.1 (H)	Following 3.1.9 and within 2 WD	Notification that they will participate in Technical Assurance process, continue to 3.1.12; or If no notification received LCCC to take action, continue to 3.1.11	Generator LCCC	LCCC	CFD ID CFD ID	Email Internal Process
3.1.11		Following 3.1.10	If LCCC get Generator to participate in Technical Assurance process continue to 3.1.13; or LCCC to determine if Termination Event has occurred END PROCESS	LCCC LCCC	MSP	CFD ID CFD ID	Email Internal Process
3.1.12		Following 3.1.14 and within 2 WD	Notification that Generator will participate in Technical Assurance process	LCCC	MSP	CFD ID	Email
3.1.13		Following 3.1.11 or 3.1.12, as applicable and within 1 WD	Notification that Generator will participate in Technical Assurance process, continue to 3.1.2	MSP	MA	CFD ID and Generator details (name, address, phone number and email address)	Email

Ref	Condition	When	Action	From	To	Input Information Required	Method
3.1.14		Following 3.1.4 and within 10 WD	Analyse the submitted information and perform the Metering Technical Assurance Stage 1 Test as per Section 1.3.	MA		Items in Section 3.1.	Internal Process
3.1.15	31.13 & 31.14	Following 3.1.14 and within 5 WD	Arrange access for onsite audit Continue to Metering Access Right Process 3.2	MA			
3.1.16	31.13	On the agreed date for access (From Metering Access Right Process 3.2)	Perform the Metering Technical Assurance Stage 2 Test as per Section 1.5.	MA		Items in Section 3.1.	Internal Process
3.1.17		Following 3.1.16 and within 5 WD	Report results of audit to MSP. If the audit has been passed continue to 3.1.21; or If the audit has been failed continue to 3.1.18.	MA	MSP	Submit the results of the audit (template in Appendix 3 – Results Template).	Email

Ref	Condition	When	Action	From	To	Input Information Required	Method
3.1.18		Following 3.1.17 and within 2 WD	Submit report of results of audit. Detailing the areas where the MA has reported non-compliance on the Facility Metering Equipment	MSP	Generator LCCC	Audit Results Report	Email
3.1.19		Following 3.1.18 and within 2 WD	Notify BSCCo of SVA or CVA Metering System with an issue affecting the quality of data for settlement purposes	MSP	BSCCo	CFD ID with corresponding MPAN/MSID relating to the applicable SVA or CVA Metering System; Nature of the non-compliance.	Email
3.1.20	31.2	Following 3.1.18 and within 2 WD	Notification that the Generator has failed the audit and has a Metering Compliance Obligation Breach, continue to 4.3 CFD Metering Compliance Obligation Breach **END PROCESS**	LCCC	Generator	Metering Breach Notice shall include: (i) which Metering Compliance Obligation the LCCC considers that the Generator has breached; and (ii) be accompanied by such Supporting Information as the LCCC considers necessary to evidence the breach of the Metering Compliance Obligation.	Email

Ref	Condition	When	Action	From	To	Input Information Required	Method
3.1.21	31.1	Following 3.1.17 and within 2 WD	Notification that the Generator has passed the audit **END PROCESS**	MSP	Generator LCCC	CFD ID; Notification that the Generator has passed the audit. (Metering Compliance Notice example in Appendix 1 – Notification Templates.)	Email

3.2 Metering Access Right

This is the process for arranging site access for the purposes of conducting an audit of the Facility Metering Equipment.

Ref	Condition	When	Action	From	To	Input Information Required	Method
3.2.1	31.13 and 31.14	Following 3.1.15 and within 5 WD	Submit a Metering Technical Assurance Site Access Notice to exercise the Metering Access Right.	MA	Generator	Issue a Metering Technical Assurance Site Access Notice. (example in **Error! Reference source not found.**). Specify who will attend and the date which the Generator must permit the exercise of the Metering Access Right.	
3.2.2	31.15	Within 10 WD of receipt of notification in 3.2.1 if the Generator is the Registrant of the Facility; or within 15 WD of receipt of notification in 3.2.1 if the Generator is not the Registrant of the Facility	Arrange access to the Facility and notify that the proposed inspection date is acceptable	Generator	MA	CFD ID	Email

Ref	Condition	When	Action	From	To	Input Information Required	Method
3.2.3	31.13	On the date specified on the Metering Inspection Notice	If the Metering Access Right is granted by the Generator continue to 3.1.16 (Metering Technical Assurance Process)				
			If the Metering Access Right is not granted by the Generator continue to 3.2.4	MA	MSP	Report on the non-access to the Facility Metering Equipment	Email
3.2.4	31.13	Following 3.2.3 and within 2 WD	Notify that the Generator is in breach of the Metering Access Right	MSP	LCCC	Notification of Metering Access Right breach	Email
			Request Generator proposes new date for audit	MA	Generator	Request to Generator to provide date for audit	Email

Ref	Condition	When	Action	From	To	Input Information Required	Method
3.2.5	31.13, 31.14 and 31.17	Following 3.2.4	Notify Generator they are in breach of the Metering Access Right and they must allow access. Send a Metering Inspection Notice. The LCCC may suspend payment of Net Payable Amounts in any period the Generator is in breach of the Metering Access Right.	LCCC	Generator EMRS (If applicable)	Metering Access Right notification; Date of failed visit. Metering Inspection Notice[7] If applicable notify the Generator of: Its intention to suspend payment of any Net Payable Amounts; and The date from which it proposes to effect such suspension. Implement suspension	Post / Email Internal Process
3.2.6	31.18	Following 3.2.4 or 3.2.5, as applicable	The Generator grants the Metering Access Right.	Generator	LCCC MA MSP	Notification the Metering Access Right will be granted. Specify the date the Metering Access Right will be granted.	Email

[7] CFD Standard Terms and Conditions https://www.gov.uk/government/publications/contracts-for-difference-standard-terms-and-conditions

Ref	Condition	When	Action	From	To	Input Information Required	Method
3.2.7	31.18	Following 3.2.6 and on the same WD	Confirm date access will be granted	MSP	MA	Date access will be granted	Email
3.2.8	31.13	On the rearranged date from 3.2.6	If the Metering Access Right is granted by the Generator continue to 3.2.9 If the Metering Access Right is not granted by the Generator send notification to MSP and continue to 3.2.10	MA	MSP	Report on the no access to the Facility Metering Equipment	Email
3.2.9	31.18	Following 3.2.8	If applicable the LCCC shall pay any amounts to the Generator which would have been payable but for the operation of 3.2.5. No compensatory interest or default interest shall be payable. Continue to 3.1.16 (Metering Technical Assurance Process) **END PROCESS**	LCCC	Generator EMRS	Arrange payment.	Email

Ref	Condition	When	Action	From	To	Input Information Required	Method
3.2.10	31.13	Following 3.2.8 and within 2 WDs	Notify the LCCC that the Generator is in breach of the Metering Access Right	MSP	LCCC	Notification of Metering Access Right breach	Email
3.2.11	31.19	20 WDs following the latest permitted date in 3.2.2	If no Metering Access Right has been granted then a Metering Access Termination Event will have deemed to have occurred. If a Termination Event has occurred the LCCC shall have the right to give notice to the Generator terminating the Contract for Difference. Issue a Default Termination Notice, if applicable **END PROCESS**	LCCC	Generator CFD SSP	If applicable, Default Termination Notice[8]	Email

[8] CFD Standard Terms and Conditions https://www.gov.uk/government/publications/contracts-for-difference-standard-terms-and-conditions

3.3 CFD Metering Compliance Obligation Breach

The Generator as a result of a site audit has a non-compliance deemed to be currently affecting the Metered Volumes submitted to CFD SSP.

Ref	Condition	When	Action	From	To	Input Information Required	Method
3.3.1	31.3	Within 10 WD of receipt of the Metering Breach Notice in 3.1.20 ("Metering Breach Response Notice Period")	Investigate the compliance breach and respond to the Metering Breach Notice that either: Accepts that there has been a breach continue to 3.3.2 Does not accept there has been a breach continue to 3.3.13 If no Metering Breach Response Notice is submitted continue to 3.3.13	Generator	LCCC	Metering Breach Response Notice[9] If the Generator accepts there has been a compliance breach the Metering Breach Response Notice must include the date from which the Generator accepts the breach occurred.	Email / Post

[9] CFD Standard Terms and Conditions https://www.gov.uk/government/publications/contracts-for-difference-standard-terms-and-conditions

Ref	Condition	When	Action	From	To	Input Information Required	Method
3.3.2	31.3 (A), 31.4 (A) and 31.5 (A) [31.7 (A) in Private Network]	Within 15 WD after the later of: The expiry of the Metering Breach Notice Period; and The date on which an Expert makes a determination (CFD Expert Determination Procedure)	Submit a copy of the Metering Remediation Plan If SVA or CVA Metering System this plan will be from the BSC Company responsible for remedying the non-compliance. This is considered to be BSC Party approval If Private Network site LCCC approves plan All Metering Remediation Plans will be checked	Generator	LCCC MSP MA	Metering Remediation Plan	Email
3.3.3		Within 2 WD of receipt of Metering Remediation Plan	Analyse Metering Remediation Plan and determine if it will resolve non-compliance: If Yes continue to 3.3.7; or If No continue to 3.3.4	MA	LCCC MSP	Metering Remediation Plan	Internal Process
3.3.4		Same WD as 3.3.3	Notify LCCC / MSP of areas of the Metering Remediation Plan that will not resolve the non-compliance	MA	LCCC MSP	Details of problem with Metering Remediation Plan	Email

Ref	Condition	When	Action	From	To	Input Information Required	Method
3.3.5		Following 3.3.4 and within 1 WD	Notification of areas of the Metering Remediation Plan that will not resolve the non-compliance	LCCC	Generator	Details of problem with Metering Remediation Plan	Email
3.3.6		Following 3.3.5 and within 5 WD	Submit a revised Metering Remediation Plan to resolve the non-compliance. Continue to 3.3.2	Generator	LCCC MSP MA	Metering Remediation Plan	Email
3.3.7	31.5 (B) (i) [31.7 (B) (i) in Private Network]	As soon as reasonably practicable after the date referred to in 3.3.2 and no later than 60 WD after a BSC Party or MA has approved the Metering Remediation Plan	Implement the Metering Remediation Plan If SVA or CVA Metering System continue to 3.3.8; or If Private Network site continue to 3.3.9.	Generator			Internal Process

Ref	Condition	When	Action	From	To	Input Information Required	Method
3.3.8	31.5 (B) (ii)	As soon as reasonably practicable after the date referred to in 3.3.2 and no later than 60 WD after a BSC Party has approved the Metering Remediation Plan	Provide written confirmation from the relevant BSC Party that the breach of the Metering Compliance Obligation has been remedied to their satisfaction.	Generator	LCCC MSP	Written confirmation from relevant BSC Party	Email
3.3.9	31.5 (C) [31.7 (B) (ii) in Private Network]	Within 5 WD after remedying the breach and no later than 60 WD after a BSC Party or MA has approved the Metering Remediation Plan	Provide written confirmation that the breach of the Metering Compliance Obligation has been remedied.	Generator	LCCC MSP	Generator Metering Remediation Notice[10] Any Supporting Information	Email

[10] CFD Standard Terms and Conditions https://www.gov.uk/government/publications/contracts-for-difference-standard-terms-and-conditions

Ref	Condition	When	Action	From	To	Input Information Required	Method
3.3.10	31.6 [31.8 in Private Network]	Within 20 WD of receipt of the Generator Metering Remediation Notice	The MSP may request Supporting Information in relation to the Generator Metering Remediation Notice.	MSP	Generator	Generator Metering Remediation Notice Information Request[10]	Email
3.3.11	31.7 [31.9 in Private Network]	Within 20 WD of receipt of the Generator Metering Remediation Notice, or such longer period as specified by the MSP	Submit the requested Supporting Information in relation to the Generator Metering Remediation Notice.	Generator	MSP	Submit Supporting Information.	Email

Ref	Condition	When	Action	From	To	Input Information Required	Method
3.3.12	31.8 [31.11 in Private Network]	Following 3.3.11	If the Generator has not satisfied 3.3.8, 3.3.9 and 3.3.11 (as applicable) a Technical Compliance Termination Event will have deemed to have occurred. Inform LCCC; or If the Generator has satisfied 3.3.8, 3.3.9 and 3.3.11 (as applicable) inform LCCC **END PROCESS**	MSP MSP	Generator LCCC Generator LCCC	Notification of compliance breach	Email
3.3.13	31.4 (B)	Following 3.3.1	Continue to CFD Expert Determination Procedure defined in WP133 EMR Metering Disputes Resolution Procedure working practice[11] Section 4.4				

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

Ref	Condition	When	Action	From	To	Input Information Required	Method
3.3.14	31.4 (B)	Following completion of the CFD Expert Determination Procedure	Following the determination by the Expert in accordance with the CFD Expert Determination Procedure the LCCC will either: If there has been a breach of the Metering Compliance Obligation continue to 3.3.15; or If there has not been a breach of the Metering Compliance Obligation no further action is required. Continue to 3.3.16	Expert	LCCC Generator	Determination of the dispute from the appointed Expert. See CFD Expert Determination Procedure defined in WP133 EMR Metering Disputes Resolution Procedure working practice[12] Section 3.4.	Email
3.3.15		Same WD as 3.3.14	Notify the MSP of the outcome of the CFD Expert Determination Procedure Continue to 3.3.2	LCCC	MSP	Determination of the dispute from the appointed Expert.	Email
3.3.16		Same WD as 3.3.14	Notify the MSP of the outcome of the CFD Expert Determination Procedure and that original non-compliance was invalid.	LCCC	MSP	Determination of the dispute from the appointed Expert.	Email

[12] Ibid

Ref	Condition	When	Action	From	To	Input Information Required	Method
3.3.17		Following 3.3.16 and within 1 WD	Notify the MSP of the outcome of the CFD Expert Determination Procedure and that original non-compliance was invalid.	MSP	MA	Determination of the dispute from the appointed Expert.	Email
3.3.18	31.1	Same WD as 3.3.17	Notification that the Generator has passed the audit. **END PROCESS**	MSP	Generator LCCC	CFD ID; Metering Compliance Notice (example in Appendix 1 – Notification Templates).	Email

4. Contact Information

For all queries please contact:

Contact Organisation	Contact
Settlement Services Provider (EMR Settlement Ltd)	Telephone: 020 7380 4333 Email: contact@emrsettlement.co.uk
Low Carbon Contracts Company (LCCC)	Telephone: 020 7211 8881 Email: info@lowcarboncontracts.uk

5. Acronyms and Definitions

A list of acronyms and definitions can be found in the 'Acronyms and Definition' document on the EMRS website[13].

[13] https://emrsettlement.co.uk/publications/working-practices/ > Useful Links

6. Appendices

6.1 Appendix 1 – Notification Templates

Metering Technical Assurance Notice

To: ***[•]*** (the "**Generator**")
[CFD ID: [•]]
From: ***[•]*** (the "**Metering Agent**")
[Address]
Dated: ***[•]***

CONTRACT FOR DIFFERENCE – METERING TECHNICAL ASSURANCE NOTICE

Dear Sirs,

As per Condition 32.1 (H) in the agreement dated ***[•]*** between you as the Generator and the CFD Counterparty (the "Agreement") the ***[CFD ID: [•]]*** is required to undergo a Metering Technical Assurance Test.

Terms and expressions defined in or incorporated into the Agreement have the same meaning when used in this notice.

The Low Carbon Contracts Company (CFD Counterparty) has requested that ***[Metering Agent]*** carry out the Metering Technical Assurance Test on their behalf.

This notice is a request for the information required to perform the Metering Technical Assurance Test, as detailed in the attached Required Metering Information Sheet.

The information should be submitted within twenty working days of receipt of this notice.

Yours faithfully,

.....
For and on behalf of the **Metering Agent**

Required Metering Information

1. Electrical Schematic Diagram – To determine whether the Metering Equipment is at the DMP and is measuring the net Metered Volume of the Facility. This diagram should show the location of the Current Transformers (CTs) and Voltage Transformers (VTs) connected to the Meters, all CFD Generator metered points and all connections to the Total System (or Private Network, as applicable);
2. CFD Generator Site Details – CFD ID, circuit name (if applicable), type of site (e.g. CMRS, SMRS, Private Network), site address, site contact details, arrangements for site visit (e.g. induction details, Risk Assessment & Method Statement required);
3. Meter Technical Details – This should include relevant Meter Point Administration Numbers (MPANs)/Metering Systems IDs (MSIDs), Meter serial numbers, Outstation ID, number of channels, measurement quantity ID, Meter and pulse multipliers, CT and VT ratios applied, communications numbers and method for remote communication, any applicable BSC Metering Dispensations for the site, any applicable Complex Site Supplementary Form, Aggregation Rule (BSCP75/4.2 form).

For a Supplier Meter Registration Service (SMRS) registered CFD Generator this should be the Data Transfer Network flow ref: D0268 'Half Hourly Meter Technical Details', for a Central Meter Registration Service (CMRS) registered CFD Generator this should be the BSCP20/4.3a, b and c forms, and for a Private Network site the Key Meter Technical Details form;

4. Data Provision – The method the CFD Generator is using to submit half hourly data to EMRS (e.g. via Balancing & Settlement Code Company (BSCCo), via Data Collector (DC) or self-submission using a defined file format). The contact details of the relevant DC to confirm Metering Technical Details they have match those submitted by the CFD Generator;
5. Time Synchronisation – For Private Network sites a statement detailing how the time of the meters is synchronised to UTC. In instances where the meters are not regularly communicated to by a DC;
6. Security – A description of the security arrangements. Any device used as part of the Facility Metering Equipment should be secure. This will be sealed and/or padlocked for Metering Equipment and password protection for software and computers used in the Metering System;
7. Testing Facilities – A description of the testing terminal block facilities for the Meters;
8. Installation Date – The date that the Metering System was installed and commissioned so compliance with the relevant Code of Practice (or Private Network Agreement, as applicable) at that time can be verified. This may be two separate dates for Measurement Transformers and Meters;
9. Measurement Transformers – The CT and VT manufacturers test certificates for the CTs and VTs so as to determine they are of the correct accuracy class and the errors are within the allowed limits of that accuracy class. If no test certificates are available a photograph of the transformer rating plates shall be submitted clearly showing the ratio, burden, accuracy class and serial number of the transformers;
10. Power Transformers – Where the Actual Metering Point (the location of the CTs and VTs) is not at the Defined Metering Point and there is a power transformer between the two points. The electrical losses of the power transformer must be accounted for as part of an approved and current BSC Metering Dispensation. A copy of the manufacturers Power Transformer Test Certificate will also be required;
11. Meters – The Meter manufacturers test certificates (or a calibration test certificate tested at the required points performed by a 3rd party) so as to determine that the Meters are of the correct accuracy class and the errors are within the allowed limits of the applicable Code of Practice or Private Network TSR;

12. Measurement Transformer Burdens – Evidence of the burden on the CTs and VTs is to be provided which demonstrates that the CT and VT burden limits have not been exceeded. These may be calculated or measured burdens but evidence will be required that justifies the estimation;
13. Commissioning – A copy of the commissioning records for the Metering Equipment, including Measurement Transformer commissioning (e.g. ratio and polarity tests), Meter commissioning tests and Meter proving tests;
14. Transformer Loss Compensations – If transformer error/loss compensation has been applied to the Meters then evidence of the compensation calculation must be provided. This can be for the Measurement Transformer errors only or in a 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;
15. Cable and Overhead Line Loss Compensations – If cable and overhead line loss compensation has been applied to the metering then evidence of the compensation calculation must be provided; and
16. Electrical Loss Factor – Only applicable to the Private Network a CFD Generator is operating on if the CFD Generator is a Third Party Access site; the CFD Generator will have a copy of the methodology statement justifying the Private Network Operators calculation of electrical losses from the Facility connection point to the Boundary Point of the Private Network with the Total System.

Metering Technical Assurance Site Access Notice

To: ***[•]*** (the "**Generator**")

[CMU ID: [•]]

From: ***[•]*** (the "**Metering Agent**")

[Address]

Dated: ***[•]***

CONTRACTS FOR DIFFERENCE – METERING TECHNICAL ASSURANCE SITE ACCESS NOTICE

Dear Sirs,

As per Condition 31.13 in the agreement dated ***[•]*** between you as the Generator and the CFD Counterparty (the "Agreement") the ***[CFD ID: [•]]*** is required to undergo a Metering Technical Assurance Test.

Terms and expressions defined in or incorporated into the Agreement have the same meaning when used in this notice.

The Low Carbon Contracts Company (CFD Counterparty) has requested that ***[Metering Agent]*** carry out the Metering Technical Assurance Test on their behalf.

This notice is a request for site access to perform the Metering Technical Assurance Test on ***[Date]***. The ***[Generator]*** shall arrange access to the Facility Metering Equipment; this includes the Meters, communications equipment, Current Transformers, Voltage Transformers for all metered points.

The representative of the ***[Metering Agent]*** to conduct the Metering Test will be ***[Name]***.

If this date is not suitable the ***[Generator]*** shall respond to this notice proposing a date within twenty working days of the original requested date for access.

Yours faithfully,

.....

For and on behalf of the **Metering Agent**

Metering Compliance Notice

To: ***[•]*** (the "**Generator**")

[Unique reference number: [•]]

From: ***[•]*** (the "**Management Services Provider**")

[Address]

Dated: ***[•]***

CONTRACT FOR DIFFERENCE – METERING COMPLIANCE NOTICE

Dear Sirs,

As per Condition 31.1 in the agreement dated ***[•]*** between you as the Generator and the CFD Counterparty (the "Agreement") the ***[CFD ID: [•]]*** Facility Metering Equipment is fully compliant with the Metering Compliance Obligations.

Terms and expressions defined in or incorporated into the Agreement have the same meaning when used in this notice.

The Low Carbon Contracts Company (CFD Counterparty) has requested that ***[Management Services Provider]*** issue this notice following the ***[Metering Agent]*** performing a Metering Technical Assurance Test on ***[Date]***.

Yours faithfully,

.....

For and on behalf of the **Management Services Provider**

6.2 Appendix 2 – Onsite Tests

- **Correct Energy Measurement Check**

To verify that the Metering System is recording the correct amount of energy, checks shall be carried out that compare the primary load with that being recorded by the Metering System. However, due to the possible restrictive physical location of the primary conductors and Plant at an installation, access may be limited. Where this is the case, other suitable methods may be used to determine correct measurement.

Sites installations can be divided up into the following three categories:

LV whole current;

LV, CT operated; and

HV, CT & VT operated.

Sites that fall into categories (i) and (ii) will prove to be the most accessible for prevailing load checks. Sites in category (iii) may be more difficult to access, but it is often possible to use a clip-on ammeter around the current transformer cables where access to switchgear is restricted.

Note: When all preferred methods of checking the prevailing load fails, other suitable engineering methods may be adopted to establish correct measurement.

Methods of establishing primary load (in order of preference):

i) The demand (derived from independently measured primary values) shall be compared to 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) shall be compared to the Meter's demand reading for the same period; or

iii) Where appropriate an alternative measurement device shall be used for comparison with that of the Meter; or

iv) The CFD Generator shall provide the MA with appropriate commissioning records. The MA is required to establish that these details sufficiently verify that the Meter has been proven to be operating correctly during commissioning; or

v) In the event that none of the above is possible, the MA will notify MSP giving the reasons. (This recognises that if (i) to (iv) are not possible additional checks do not add value).

- **Consumption Data Comparison Check**

The MA shall compare the metered energy data for one half hour recorded at the time of the Metering Test with the consumption data held by the HHDC or CDCA for that same half-hour period. If the values differ by more than agreed tolerances the MA will note the non-compliance. This check can take place on site or off site at the discretion of the MA and either method forms part of the Metering Test.

The tolerances to be used will be those agreed from time to time by the PAB for the BSCCo TAA.

In order to obtain and verify stored Meter data values that are eventually transferred to the HHDC or CDCA, it will be necessary to use a Hand Held Unit running relevant approved Hand Held Unit protocol to download data from the Meter or Outstation. This process will also provide engineering units (e.g. kW half hours) or raw pulses and some standing data. Once the pulse multiplier or constant (e.g. a multiplication constant of 0.5 is required to convert kW/MW half hour values to kWh/MWh half hour values) is applied the kWh/MWh value can be compared with the consumption data held by the CDCA or HHDC and the Meter's (displayed) cumulative advance over the same half hour period. The kWh/MWh value will also be compared with the measured value obtained from the Correct Energy Measurement Check.

This Consumption Data Comparison Check shall take the following format:

a) Compare the Meter Technical Details provided by the CFD Generator with that observed onsite. Consideration should also be given to commissioning and historic proving test information.

b) Take a reading (for the dominant Active Energy flow direction at the time) of the cumulative register on the Meter's display at the beginning and end of the same half hour period that is to be downloaded from the Meter's Outstation and requested from the CDCA or HHDC.

c) Using the Meter Register Multiplier, calculate the true Meter register half hour advance for that half hour period. This cumulative Meter register half hour advance shall also be used to confirm the findings from the Correct Energy Measurement Check where, ideally, the readings for that check were taken within the same half hour period and the load (or generation) was relatively constant during that period. The MA shall use its discretion, bearing in mind the predictability of the load (or generation), where the readings weren't taken in the same half hour period.

d) Download a half hour reading from the Meter's Outstation and convert the value (raw pulses or engineering units) into a kWh half hour reading (for SVA registered Metering Systems) or

e) Request the current actual consumption data held by the CDCA or HHDC for the same half hour period and compare the energy recorded by the Settlement Meter (cumulative Meter register half hour advance) and its associated Outstation(s) (half hour value) with the energy value held in the CDCA or HHDC systems which will be submitted to Settlement.

One Active Energy channel will be requested. In CFD this will normally be the Active Export channel.

6.3 Appendix 3 – Results Template

Contracts for Difference Site Audit Report

CFD ID: _____

CFD Name: _____

Estimate of Overall Accuracy of Metering System: _____ %

Metering System Compliant: **YES / NO***

(* Delete as appropriate)

Details of Non-Compliance

Date of Test: ____/____/____

Name of person completing test: _____

EMR
SETTLEMENT
LIMITED

LOW CARBON
CONTRACTS COMPANY