

ELECTRICITY INDUSTRY PARTICIPATION CODE
RECONCILIATION PARTICIPANT AUDIT REPORT



For

EMHTRADE LIMITED

Prepared by: Rebecca Elliot, Veritek Limited

Date audit commenced: 19 November 2019

Date audit report completed: 9 March 2020

Audit report due date: 21 March 2020

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EXECUTIVE SUMMARY

This Electricity Industry Participation Code Reconciliation Participant audit was performed at the request of **emhTrade Limited (emhTrade)**, to support their application for renewal of certification in accordance with clauses 5 and 7 of schedule 15.1. The audit was conducted in accordance with the Guideline for Reconciliation Participant Audits version 7.2.

emhTrade is a HHR only trader. They have changed their business model and now supply a much smaller customer base. They no longer accept NHH metered ICPs which previously could be switched in under the HEM profile until an AMI or HHR meter could be installed. Only one upgrade occurred during the audit period.

emhTrade has a high level of compliance but due to two minor events their non-compliance appears to have increased during the audit period.

- The one NHH metered ICP that switched in during the audit was not upgraded during the first month resulting in the submissions for this ICP to be missing from the February initial submission. This caused three of the non-compliances found in this audit.
- Two NSP changes were missed causing six ICPs to be reconciled to the incorrect NSP. This caused three of the non-compliances.

Overall emhTrade have robust processes in place, and with a smaller customer base I don't expect these non-compliances to be present in the next audit. I note that nine of the non-compliances have control ratings of strong indicating these are one-off errors and controls are robust. Four of the non-compliances recorded in the last audit have been cleared.

This audit found 17 non-compliances and makes no recommendations. The date of the next audit is determined by the Electricity Authority and is dependent on the level of compliance during this audit. The table below provides some guidance on this matter and contains a future risk rating score of 26, which results in an indicative audit frequency of 12 months. I have considered this result in conjunction with emhTrade's responses agree with the recommendation.

The matters raised are shown in the tables below:

AUDIT SUMMARY

NON-COMPLIANCES

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Relevant information	2.1	10.6, 11.2, 15.2	Six ICPs recorded with the incorrect NSP.	Moderate	Low	2	Identified
Audit trails	2.4	21 Schedule 15.2	Audit trails do not record the operator identifier for the person who completed the activity; only the emhTrade system user ID writes to the database.	Strong	Low	1	Identified
Changes to registry information	3.3	10 Schedule 11.1	Two late status updates to ready for decommissioning. Two late trader updates.	Strong	Low	1	Cleared
Provision of information to the registry manager	3.5	9 Schedule 11.1	The registry was not updated within five business days of commencement of trading for six ICPs.	Moderate	Low	2	Identified
Losing trader must provide final information - standard switch	4.3	5 of Schedule 11.3	One late CS file. The estimated daily kWh values were not consistent with the average consumption for the last read to read period in transfer CS files. Last read date incorrectly recorded for at least one CS file.	Moderate	Low	2	Disputed
Gaining trader informs registry of switch request - switch move	4.10	11 Schedule 11.3	Five late CS files. The estimated daily kWh values were not consistent with the average consumption for the last read to read	Moderate	Low	2	Disputed

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			period in transfer CS files. Last read date incorrectly recorded for at least one CS file.				
Withdrawal of switch requests	4.15	17 Schedule 11.3	Three late switch withdrawals.	Strong	Low	1	Identified
Electricity conveyed & notification by embedded generator	6.1	10.13	A meter was bridged, energy was not metered and quantified according to the code for ICP 0492008787LCD8F.	Strong	Low	1	Identified
Buying and selling notifications	11.1	15.3	No trading notification was provided for HEM profile for CBG011.	Strong	Low	1	Cleared
Calculation of ICP days	11.2	15.6	Inaccurate ICP days were reported for a small number of ICPs. Corrected data will be washed up in the next available revision, and processes have been corrected.	Moderate	Low	2	Identified
Electricity supplied information provision to the reconciliation manager	11.3	15.7	Incorrect billed volumes reported in the AV130.	Weak	Low	3	Investigating
HHR aggregates information provision to the reconciliation manager	11.4	15.8	Alleged breach 1811EMHL1 was recorded for late provision of February 2019 initial submission information. HHR aggregates file does not contain electricity supplied information.	Strong	Low	1	Cleared

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Creation of submission information	12.2	15.4	No volume was submitted in the Ri revision for one ICP for February 2019. Alleged breach 1811EMHL1 was recorded for late provision of February 2019 initial submission information.	Strong	Low	1	Identified
Allocation of submission information	12.3	15.5	Six ICPs recorded with the incorrect NSP.	Moderate	Low	2	Identified
Accuracy of submission information	12.7	15.12	Six ICPs recorded with the incorrect NSP.	Moderate	Low	2	Identified
Reconciliation participants to prepare information	12.9	2 of schedule 15.3	No volume was submitted in the Ri revision for one ICP for February 2019.	Strong	Low	1	Disputed
Provision of submission information to the RM	13.1	8 of schedule 15.3	No volume was submitted in the Ri revision for one ICP for February 2019.	Strong	Low	1	Disputed
Future Risk Rating						26	

Future Risk Rating	0	1-3	4-15	16-40	41-55	55+
Indicative audit frequency	36 months	24 months	18 months	12 months	6 months	3 months

RECOMMENDATIONS

Subject	Section	Description	Recommendation
		Nil	

ISSUES

Subject	Section	Description	Issue
		Nil	

1. ADMINISTRATIVE

1.1. Exemptions from Obligations to Comply with Code (Section 11)

Code reference

Section 11 of Electricity Industry Act 2010.

Code related audit information

Section 11 of the Electricity Industry Act provides for the Electricity Authority to exempt any participant from compliance with all or any of the clauses.

Audit observation

Current code exemptions were reviewed on the Electricity Authority website.

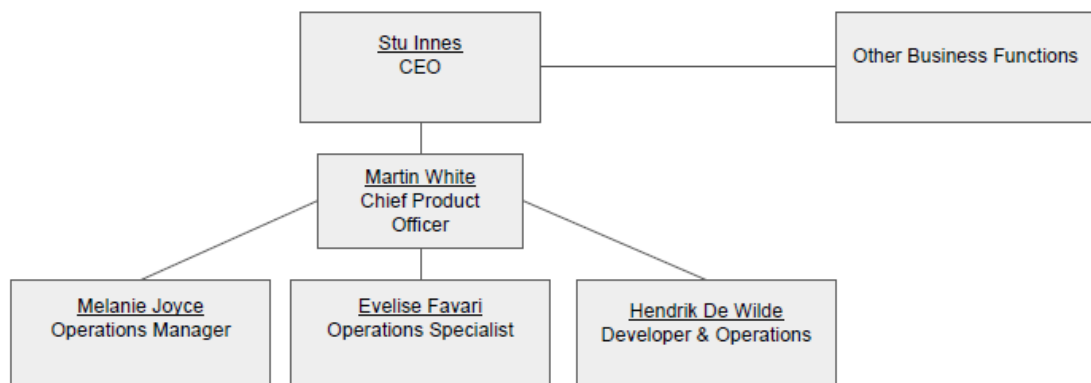
Audit commentary

There are no exemptions in place that are relevant to the scope of this audit.

1.2. Structure of Organisation

emhTrade provided a copy of their current organisational structure.

emhTrade Reconciliation Participant Organisation Chart



1.3. Persons involved in this audit

Auditor:

Rebecca Elliot

Veritek Limited

Electricity Authority Approved Auditor

emhTrade personnel assisting in this audit were:

Name	Title
Evelise Favari	Operations and Customer Support Representative
Melanie Joyce	Operational Process Manager

1.4. Use of Agents (Clause 15.34)

Code reference

Clause 15.34

Code related audit information

A reconciliation participant who uses an agent

- *remains responsible for the contractor's fulfilment of the participant's Code obligations*
- *cannot assert that it is not responsible or liable for the obligation due to something the agent has or has not done.*

Audit observation

emhTrade receives HHR data from AMS and FCLM as MEPs. They used to receive HHR data from Metrix as an MEP but no longer have any customers with Metrix meters. emhTrade act as the agent for the submission of NSP volume data for Waipa Networks Lakewood embedded network (LAKE). They have sub-contracted this to John Candy Consulting, so they take no part in this process. A separate report of this is being undertaken and Waipa Networks will submit that report in relation to the undertaking of these services, therefore emhTrade do not use any agents in relation to the functions they carry out.

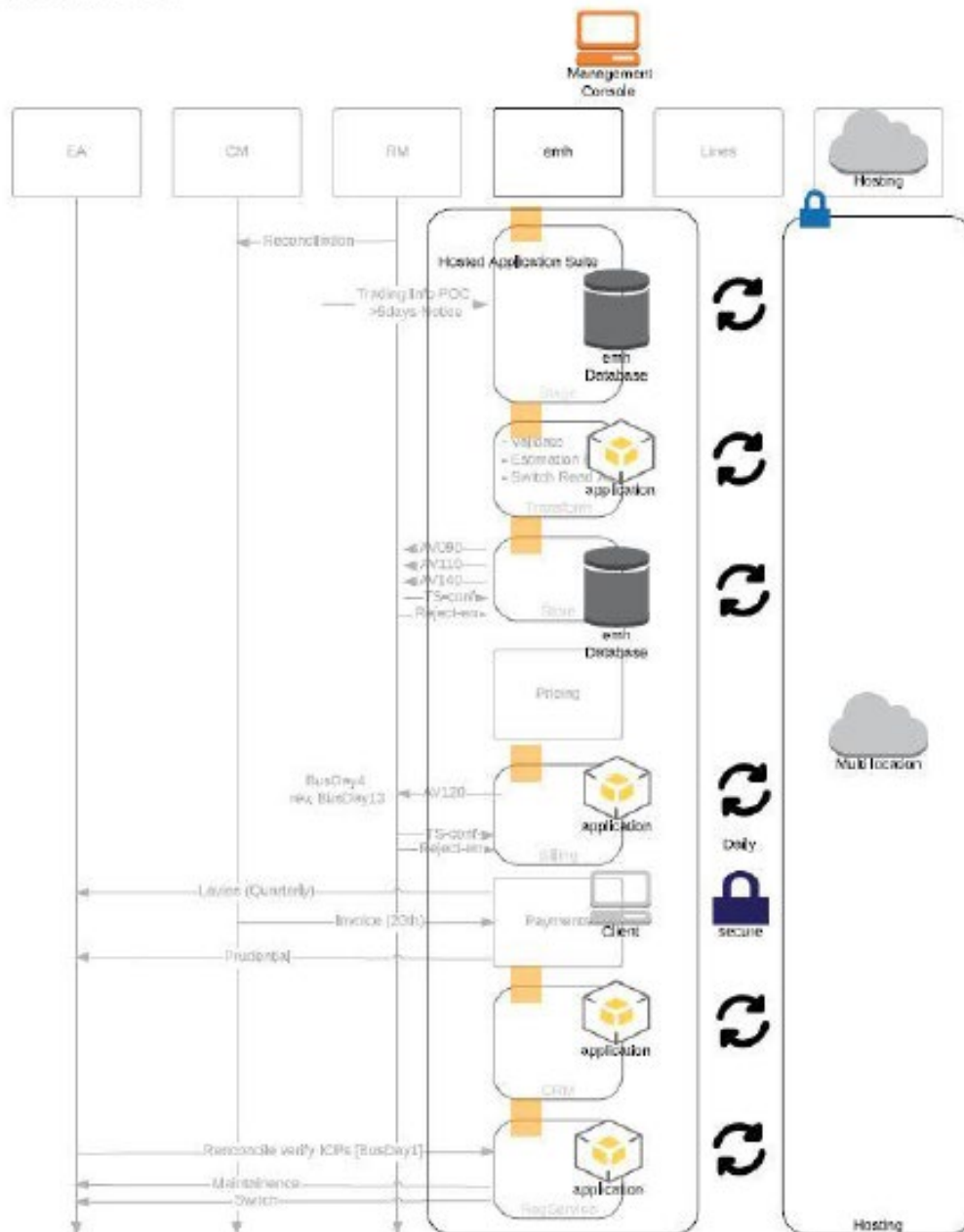
Audit commentary

Not applicable

1.5. Hardware and Software

The following diagram shows emhTrade's system configuration. I confirmed there have been no changes to this during the audit period. The data in the customer data directory is backed up daily to a geographically separate system. Backups are encrypted.

Fig 1 – System Overlay of Backup and Recovery Domains within emh Application Suite and Data



1.6. Breaches or Breach Allegations

emhTrade had one breach allegation recorded by the Electricity Authority within the scope of this audit:

Ref	Clauses breached	Description	Outcome
1811EMHL1 (13/02/19)	Part 15 clause 15.4 (1)	EMH Trade Limited (EMHT) failed to submit data to the reconciliation manager by 16:00 on business day 4 in breach of Part 15.4 (1) of the Code.	This was closed early.

As detailed in **section 12.2**, emhTrade now submits their reconciliation files by COB day three to avoid this occurring. There have been no further instances of this occurring.

1.7. ICP Data

emhTrade provided a list file for each of their participant codes as at January 202. The active ICPs from the list file are summarised by meter category in the table below:

Metering Category	(2020)	(2018)	(2017)
1	77	291	184
2	2	-	-
3	-	-	-
4	3	3	-
5	-	-	-
9	-	-	-

Status	Number of ICPs (2020)	Number of ICPs (2018)	Number of ICPs (2017)
Active (2,0)	82	294	184
Inactive – new connection in progress (1,12)	-	-	-
Inactive – electrically disconnected vacant property (1,4)	-	-	-
Inactive – electrically disconnected remotely by AMI meter (1,7)	-	-	-
Inactive – electrically disconnected at pole fuse (1,8)	-	-	-
Inactive – electrically disconnected due to meter disconnected (1,9)	-	-	-
Inactive – electrically disconnected at meter box fuse (1,10)	-	-	-
Inactive – electrically disconnected at meter box switch (1,11)	-	-	-
Inactive – electrically disconnected ready for decommissioning (1,6)	-	-	-
Inactive – reconciled elsewhere (1,5)	-	-	-
Decommissioned (3)	3	1	-

emhTrade's customer base has reduced during the audit period as they have refocussed the business.

1.8. Authorisation Received

An emailed authorisation was received from emhTrade.

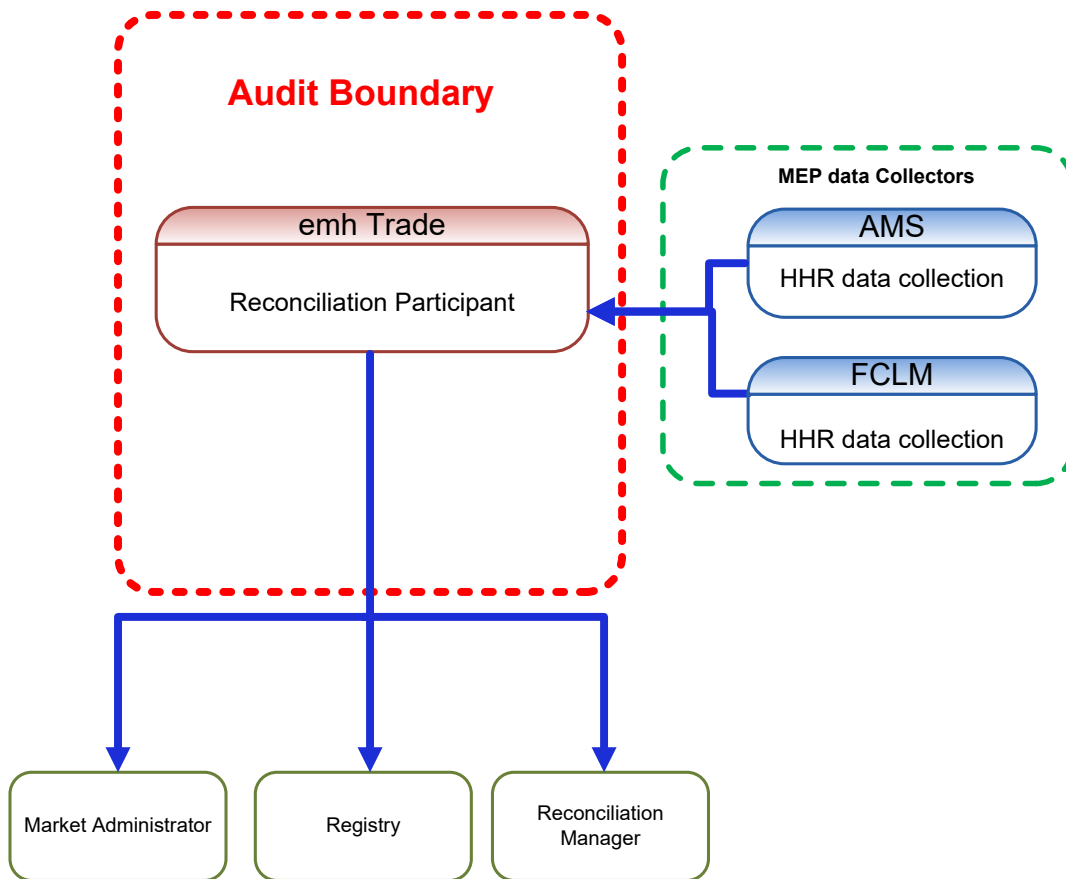
1.9. Scope of Audit

This Electricity Industry Participation Code Reconciliation Participant audit was performed at the request of emhTrade, to support their application for renewal of certification in accordance with clauses 5 and 7 of schedule 15.1.

The audit was conducted in accordance with the Guideline for Reconciliation Participant Audits V7.2.

The audit was carried out at emhTrade's premises in Auckland on 28th February 2020.

The scope of the audit is shown in the diagram below, with the emhTrade audit boundary shown for clarity.



The table below shows the tasks under clause 15.38 of part 15 for which emhTrade requires certification. AMS and FCLM provide AMI data as MEPs, not as agents.

Tasks Requiring Certification Under Clause 15.38(1) of Part 15	Agents Involved in Performance of Tasks	MEPs Providing AMI data
(a) - Maintaining registry information and performing customer and embedded generator switching		
(b) – Gathering and storing raw meter data		AMS – HHR (AMI) FCLM – HHR (AMI)
(c)(i) - Creation and management of volume information		AMS – HHR (AMI) FCLM – HHR (AMI)
(d) – Calculation of ICP days		
(da) - delivery of electricity supplied information under clause 15.7		
(db) - delivery of information from retailer and direct purchaser half hourly metered ICPs under clause 15.8		
(e) – Provision of submission information for reconciliation		

1.10. Summary of previous audit

emhTrade provided a copy of their previous audit conducted in November 2017 by Tara Gannon of Veritek Limited. The summary tables below show the status of the non-compliances in relation to the clauses, recommendations and issues raised in the previous audit. Further comment is made in the relevant sections of this report.

Table of Non-compliance

Subject	Section	Clause	Non-compliance	Status
Relevant information	2.1	10.6, 11.2, 15.2	211 ICPs on HHE profile have HHR certification and should have the HHR profile applied.	Still existing
Audit trails	2.4	21 Schedule 15.2	Audit trails do not record the operator identifier for the person who completed the activity; only the emhTrade system user ID writes to the database.	Still existing
Changes to registry information	3.3	10 Schedule 11.1	One late status update to active. Three late trader updates.	Still existing
ANZSIC codes	3.6	9 (1)(k) of Schedule 11.1	Three ICPs had incorrect ANZSIC codes.	Cleared
Gaining trader informs registry of switch request - switch move	4.7	9 Schedule 11.3	One switch move was requested more than two business days after pre-conditions were cleared.	Cleared
Losing trader provides information - switch move	4.8	10(1) Schedule 11.3	One AN had a proposed transfer date earlier than the gaining trader's proposed date.	Cleared
Gaining trader to advise the registry manager - gaining trader switch	4.14	16 Schedule 11.3	One HH CS file was late.	Cleared - no HH switching occurred during the audit period
Buying and selling notifications	11.1	15.3	No trading notification was provided for HHE profile for HEP0331, or the HEM profile for HWB1101 or MTM0331.	Still existing

Subject	Section	Clause	Non-compliance	Status
Calculation of ICP days	11.2	15.6	Inaccurate ICP days were reported for a small number of ICPs. Corrected data has been washed up, and processes have been corrected.	Still existing
HHR aggregates information provision to the reconciliation manager	11.4	15.8	HHR aggregates file does not contain electricity supplied information. Alleged breach 1810EMHL1 was recorded for late provision of September 2018 initial submission information.	Still existing
Creation of submission information	12.2	15.4	Alleged breach 1810EMHL1 was recorded for late provision of September 2018 initial submission information.	Still existing
Accuracy of submission information	12.7	15.12	211 ICPs were assigned the HHE profile for periods when HHR certified metering was installed. Inaccurate ICP days were reported for a small number of ICPs. Corrected data has been washed up, and processes have been corrected.	Still existing

Table of Recommendations

Subject	Section	Clause	Recommendation	Status
Relevant information	2.1	Trader data checks	I recommend reconciling trader and status information from the registry to emhTrade's database to ensure that the two systems are consistent.	Not adopted. This is being addressed using manual processes
ICPs at new or ready status for 24 months	3.10	Monitoring of new and ready ICPs	A Registry List (type P) with proposed trader = EMHT and status = 000 and 999 should be run at least quarterly to identify ICPs which have been at new or ready status for more than 18 months and require follow up.	Adopted
Electricity supplied information provision to the reconciliation manager	11.3	Billed data	Monitor as billed versus submission volumes over the coming months. Investigate to confirm the reason for the variance between billed and submitted volumes.	Still existing – emhTrade are investigating this as discussed in section 11.3

2. OPERATIONAL INFRASTRUCTURE

2.1. Relevant information (Clause 10.6, 11.2, 15.2)

Code reference

Clause 10.6, 11.2, 15.2

Code related audit information

A participant must take all practicable steps to ensure that information that the participant is required to provide is:

- a) complete and accurate*
- b) not misleading or deceptive*
- c) not likely to mislead or deceive.*

If the participant becomes aware that in providing information under this Part, the participant has not complied with that obligation, the participant must, as soon as practicable, provide such further information as is necessary to ensure that the participant does comply.

Audit observation

The process to find and correct incorrect information was examined. The registry validation process was examined in detail in relation to the achievement of this requirement. The list file as at 8/01/20 was examined to identify any registry discrepancies and confirm that all information was correct and not misleading.

Audit commentary

On business day one of each month, emhTrade reviews changes to registry ICP or metering information maintained by distributors and MEPs. The data is checked in emhTrade's system to ensure that it is recorded correctly. This process also identifies any changes to distributed generation or unmetered load details that require action by emhTrade.

emhTrade's Admin Panel is checked daily. The admin panel primarily identifies inconsistencies between data fields and data that requires investigation or action, including:

- profiles that are invalid for the MEP and/or meter configuration recorded,
- T99 series (unknown) ANZSIC codes,
- ICPs which have failed billing validation, or have been uninvoiced for more than two weeks,
- differences between switch reads and AMI data received of more than 50 kWh,
- new points of connection,
- missing meter readings and intervals,
- ICPs with no active customer, or unbilled kWh,
- switched customers with no transfer date, and
- metering documents received from MEPs which require processing.

The registry is also checked daily for notifications and files that require processing.

In the last audit a recommendation was made to check that the trader maintained information in emhTrade's system is consistent with the values recorded on the registry. With the reduced size of the customer base, emhTrade have elected to carry out these checks manually each month rather than add this check to the admin system. emhTrade also plan to use the audit compliance report to look for inconsistencies. I did not find any instances where trader or status information was inconsistent between the registry.

The registry list was examined to identify inaccurate data:

Issue	2019 Qty	2018 Qty	Comments
Blank ANZSIC codes	0	0	Compliant.
ANZSIC "T999" not stated	0	0	Compliant.
ANZSIC "T994" don't know	0	0	Compliant.
ANZSIC "T998 "response outside of scope"	0	0	Compliant.
UML load = zero	0	0	Compliant, no unmetered load identified.
Incorrect UML load	0	0	Compliant, no unmetered load identified.
No MEP recorded or nominated and UML= "N"	0	0	Compliant.
Shared unmetered load incorrect	0	0	Compliant, no unmetered load identified.
ICPs with Distributor unmetered load populated but retail unmetered load is blank and UML flag = N	0	0	Compliant, no unmetered load identified.
Incorrect profile	0	219	Compliant
Active date variance with Initial Energisation Date	1	1	I verified that emhTrade's connection date was correct by reviewing the electrical connection paperwork. Refer to section 3.8 .
Active ICP with no MEP	0	0	Compliant.
Active Category 9 and UML "N"	0	0	Compliant.

The application of profiles was examined. The last audit recorded non-compliance for 211 ICPs which had the HHE profile, but the meters were HHR certified, and should have had the HHR profile applied. These were all corrected to HHR in April 2019. The HEM profile was used once during the audit period for ICP 0007156273WA2E8. This profile is not to be used for more than one calendar month however, the meter change was not completed until the following month. This is in breach of this profile's criteria and is recorded as non-compliance in the emhTrade profile audit. I checked the volumes submitted for this ICP and confirmed that volumes were submitted correctly from revision 1 but no volume was submitted for the initial submission as the volumes weren't available at that time. This is recorded as non-compliance in **sections 12.2, 12.9 and 13.1**.

NSP changes were missed from being updated in the emhTrade database for six ICPs resulting in the volumes being submitted against the incorrect NSP. This will be corrected in the next revision. emhTrade intend to use the ICP missing report in addition to their existing checks to identify such discrepancies in the future. This is recorded as non-compliance in **sections 12.3 and 12.7** as well as below.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 2.1 With: Clause 10.6, 11.2, 15.2 From: 17-Nov-18 To: 8-Jan-20	Six ICPs recorded with the incorrect NSP. Potential impact: Low Actual impact: Low Audit history: Once Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	Controls are rated as moderate, as the controls did not effectively capture NSP changes. The audit risk rating is low, as this affected only a small number of ICPs, and these will be corrected in the next revision.		
Actions taken to resolve the issue		Completion date	Remedial action status
As per comments noted in section 11.2.		see 11.2	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
As per comments noted in section 11.2.		see 11.2	

2.2. Provision of information (Clause 15.35)

Code reference

Clause 15.35

Code related audit information

If an obligation exists to provide information in accordance with Part 15, a participant must deliver that information to the required person within the timeframe specified in the Code, or, in the absence of any such timeframe, within any timeframe notified by the Authority. Such information must be delivered in the format determined from time to time by the Authority.

Audit observation

Processes to provide information were reviewed and observed throughout the audit.

Audit commentary

This area is discussed in several sections in this report. I saw evidence of prompt data correction where errors were identified.

Audit outcome

Compliant

2.3. Data transmission (Clause 20 Schedule 15.2)

Code reference

Clause 20 Schedule 15.2

Code related audit information

Transmissions and transfers of data related to metering information between reconciliation participants or their agents, for the purposes of the Code, must be carried out electronically using systems that ensure the security and integrity of the data transmitted and received.

Audit observation

HHR data is provided by AMS and FCLM as MEPs via SFTP.

To confirm the process, I traced a sample of reads and volumes for a diverse sample of three ICPs from the source data to emhTrade's system and the HHR aggregates submissions.

Audit commentary

All read and volume data is transferred from the MEP to emhTrade via SFTP.

I traced a sample of data for three HHR ICPs from the source files to system and the HHR aggregates files to confirm the data transmission process, including one ICP for each MEP. All volumes matched.

Audit outcome

Compliant

2.4. Audit trails (Clause 21 Schedule 15.2)

Code reference

Clause 21 Schedule 15.2

Code related audit information

Each reconciliation participant must ensure that a complete audit trail exists for all data gathering, validation, and processing functions of the reconciliation participant.

The audit trail must include details of information:

- *provided to and received from the registry manager*
- *provided to and received from the reconciliation manager*
- *provided and received from other reconciliation participants and their agents.*

The audit trail must cover all archived data in accordance with clause 18.

The logs of communications and processing activities must form part of the audit trail, including if automated processes are in operation.

Logs must be printed and filed as hard copy or maintained as data files in a secure form, along with other archived information.

The logs must include (at a minimum) the following:

- *an activity identifier (clause 21(4)(a))*
- *the date and time of the activity (clause 21(4)(b))*
- *the operator identifier (clause 21(4)(c)).*

Audit observation

A complete audit trail was checked for all data gathering, validation and processing functions. I reviewed audit trails for a small sample of events.

Audit commentary

I viewed audit trails for a sample of changes, and found they included operator ID, date and time, and the activity completed. As recorded in the last audit, the emhTrade system user ID writes to the database, the operator ID recorded does not correspond to a person. From 1 November 2018, the code wording was clarified to confirm that the operator identifier recorded in audit trails should reflect the operator identifier for the person within the reconciliation participant who performed the activity.

It is normally possible to identify the user which updated the database, when users update or correct information. Records are also manually added to a Slack channel with additional supporting information.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 2.4 With: Clause 21 Schedule 15.2 From: 01-Nov-18 To: 8-Jan-20	Audit trails do not record the operator identifier for the person who completed the activity; only the emhTrade system user ID writes to the database. Potential impact: Low Actual impact: Low Audit history: Once Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
Low	The controls are rated as strong as the number of people accessing the database is very small and that whilst the person who processed the change is not identifiable, it is easy to determine who has made the changes due to the functions each person undertakes. The audit risk rating is assessed to be low as it was simple to determine which person was responsible for processing the change from supporting information in the sample of audit trails reviewed.		
Actions taken to resolve the issue		Completion date	Remedial action status
emhTrade was able to demonstrate user Audit trails and does not foresee an immediate risk for auditing. There will only be one primary user going forward.		NA	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
emhTrade will only have one primary user and will meet the requirements.		NA	

2.5. Retailer responsibility for electricity conveyed - participant obligations (Clause 10.4)

Code reference

Clause 10.4

Code related audit information

If a participant must obtain a consumer's consent, approval, or authorisation, the participant must ensure it:

- *extends to the full term of the arrangement*
- *covers any participants who may need to rely on that consent.*

Audit observation

I reviewed emhTrade's General Terms and Conditions for Residential Customers, which apply to all customers supplied by emhTrade.

Audit commentary

emhTrade's General Terms and Conditions for Residential Customers include consent to access for authorised parties for the duration of the contract.

Audit outcome

Compliant

2.6. Retailer responsibility for electricity conveyed - access to metering installations (Clause 10.7(2),(4),(5) and (6))

Code reference

Clause 10.7(2),(4),(5) and (6)

Code related audit information

The responsible reconciliation participant must, if requested, arrange access for the metering installation to the following parties:

- *the Authority*
- *an ATH*
- *an auditor*
- *an MEP*
- *a gaining metering equipment provider.*

The trader must use its best endeavours to provide access:

- *in accordance with any agreements in place*
- *in a manner and timeframe which is appropriate in the circumstances.*

If the trader has a consumer, the trader must obtain authorisation from the customer for access to the metering installation, otherwise it must arrange access to the metering installation.

The reconciliation participant must provide any necessary facilities, codes, keys or other means to enable the party to obtain access to the metering installation by the most practicable means.

Audit observation

I reviewed emhTrade's General Terms and Conditions for Residential Customers and discussed compliance with these clauses.

Audit commentary

emhTrade's General Terms and Conditions for Residential Customers include consent to access for authorised parties for the duration of the contract. emhTrade confirmed that they have been able to arrange access for other parties when requested.

Audit outcome

Compliant

2.7. Physical location of metering installations (Clause 10.35(1)&(2))

Code reference

Clause 10.35(1)&(2)

Code related audit information

A reconciliation participant responsible for ensuring there is a category 1 metering installation or category 2 metering installation must ensure that the metering installation is located as physically close to a point of connection as practical in the circumstances.

A reconciliation participant responsible for ensuring there is a category 3 or higher metering installation must:

- a) if practical in the circumstances, ensure that the metering installation is located at a point of connection; or*
- b) if it is not practical in the circumstances to locate the metering installation at the point of connection, calculate the quantity of electricity conveyed through the point of connection using a loss compensation process approved by the certifying ATH.*

Audit observation

The physical meter location point is not specifically mentioned in the Terms and Conditions, but the existing practices in the electrical industry achieve compliance.

The registry list with history for 17/11/18 to 8/01/20 was reviewed.

Audit commentary

emhTrade has only supplied three ICPs with metering category 3 or above. No ICPs have required loss compensation.

Audit outcome

Compliant

2.8. Trader contracts to permit assignment by the Authority (Clause 11.15B)

Code reference

Clause 11.15B

Code related audit information

A trader must at all times ensure that the terms of each contract between a customer and a trader permit:

- the Authority to assign the rights and obligations of the trader under the contract to another trader if the trader commits an event of default under paragraph (a) or (b) or (f) or (h) of clause 14.41 (clause 11.15B(1)(a)); and*
- the terms of the assigned contract to be amended on such an assignment to—*
- the standard terms that the recipient trader would normally have offered to the customer immediately before the event of default occurred (clause 11.15B(1)(b)(i)); or*
- such other terms that are more advantageous to the customer than the standard terms, as the recipient trader and the Authority agree (clause 11.15B(1)(b)(ii)); and*
- the terms of the assigned contract to be amended on such an assignment to include a minimum term in respect of which the customer must pay an amount for cancelling the contract before the expiry of the minimum term (clause 11.15B(1)(c)); and*

- *the trader to provide information about the customer to the Authority and for the Authority to provide the information to another trader if required under Schedule 11.5 (clause 11.15B(1)(d)); and*
- *the trader to assign the rights and obligations of the trader to another trader (clause 11.15B(1)(e)).*

The terms specified in sub-clause (1) must be expressed to be for the benefit of the Authority for the purposes of the Contracts (Privacy) Act 1982, and not be able to be amended without the consent of the Authority (clause 11.15B(2)).

Audit observation

I reviewed emhTrade's General Terms and Conditions for Residential Customers, which apply to all customers supplied by emhTrade.

Audit commentary

emhTrade's General Terms and Conditions for Residential Customers include assignment by the Electricity Authority in the event of retailer default.

Audit outcome

Compliant

2.9. Connection of an ICP (Clause 10.32)

Code reference

Clause 10.32

Code related audit information

A reconciliation participant must only request the connection of a point of connection if they:

- *accept responsibility for their obligations in Parts 10, 11 and 15 for the point of connection; and*
- *have an arrangement with an MEP to provide 1 or more metering installations for the point of connection.*

Audit observation

The new connection process was examined in detail to evaluate the strength of controls.

The event detail report for 17/11/18 to 8/01/20 was reviewed to identify all new connections and confirm process controls and compliance.

Audit commentary

emhTrade completed 20 new connections during the audit period.

emhTrade accepts responsibility for the ICP and works with the MEP and electrician to progress the connection. The MEP is nominated on the registry once emhTrade claims the ICP and moves it to "new connection in progress" status.

Audit outcome

Compliant

2.10. Temporary Electrical Connection of an ICP (Clause 10.33(1))

Code reference

Clause 10.33(1)

Code related audit information

A reconciliation participant may temporarily electrically connect a point of connection, or authorise an MEP to temporarily electrically connect a point of connection, only if:

- *for a point of connection to the grid – the grid owner has approved the connection*
- *for an NSP that is not a point of connection to the grid - the relevant distributor has approved the connection.*
- *for a point of connection that is an ICP, but is not as NSP:*
- *the reconciliation participant is recorded in the registry as the trader responsible for the ICP*
- *if the ICP has metered load, one or more certified metering installations are in place*
- *if the ICP has not previously been electrically connected, the relevant distributor has given written approval of the temporary electrical connection.*

Audit observation

The new connection process was examined in detail to evaluate the strength of controls.

The event detail report for 17/11/18 to 8/01/20 was reviewed to identify all new connections and confirm process controls and compliance.

Audit commentary

20 new connections were completed. No temporary electrical connections were identified.

Audit outcome

Compliant

2.11. Electrical Connection of Point of Connection (Clause 10.33A)

Code reference

Clause 10.33A(1)

Code related audit information

A reconciliation participant may electrically connect or authorise the electrical connection of a point of connection only if:

- *for a point of connection to the grid – the grid owner has approved the connection*
- *for an NSP that is not a point of connection to the grid - the relevant distributor has approved the connection.*
- *for a point of connection that is an ICP, but is not as NSP:*
- *the reconciliation participant is recorded in the registry as the trader responsible for the ICP*
- *if the ICP has metered load, 1 or more certified metering installations are in place*
- *if the ICP has not previously been electrically connected, the relevant distributor has given written approval of the temporary electrical connection.*

Audit observation

The new connection process was examined in detail to evaluate the strength of controls.

The event detail report for 17/11/18 to 8/01/20 and the audit compliance report were reviewed to identify all new connections and confirm process controls and compliance.

Audit commentary

20 new connections and no reconnections were completed during the audit period. All connections were fully certified at the time of their electrical connection date.

Audit outcome

Compliant

2.12. Arrangements for line function services (Clause 11.16)

Code reference

Clause 11.16

Code related audit information

Before providing the registry manager with any information in accordance with clause 11.7(2) or clause 11.18(4), a trader must ensure that it, or its customer, has made any necessary arrangements for the provision of line function services in relation to the relevant ICP.

Before providing the registry manager with any information in accordance with clause 11.7(2) or clause 11.18(4), a trader must have entered into an arrangement with an MEP for each metering installation at the ICP.

Audit observation

The process to ensure an arrangement is in place before trading commences on a network was examined. The process to validate and approve customer applications was observed.

Audit commentary

emhTrade has arrangements in place for line function services on all networks they trade on.

When someone applies to become a customer on emhTrade's website registry data for the ICP is retrieved and validated. emhTrade's system will only create an NT if all the following criteria are met:

- the ICP is connected to a network where arrangements are in place,
- the MEP is Metrix, FCLM or AMS (I note that no current ICPs have Metrix metering),
- the ICP has half hour metering and the AMI flag set to yes.

I observed the process and noted that applications that do not meet these criteria are declined automatically. emhTrade no longer accept sites with NHH metering, therefore any applications received with NHH metering in place will be declined and for this reason the HEM profile is not expected to be used.

Audit outcome

Compliant

2.13. Arrangements for metering equipment provision (Clause 10.36)

Code reference

Clause 10.36

Code related audit information

A reconciliation participant must ensure it has an arrangement with the relevant MEP prior to accepting responsibility for an installation.

Audit observation

The process to ensure an arrangement is in place with the MEP before an ICP can be created or switched in was checked.

Audit commentary

emhTrade demonstrated that arrangements are in place with AMS, FCLM, Metrix, and Trustpower. They only have ICPs with AMS and FCLM metering.

As discussed in **section 2.12**, emhTrade's customer application validation and approval process will only accept ICPs where emhTrade has an arrangement with the MEP.

Audit outcome

Compliant

3. MAINTAINING REGISTRY INFORMATION

3.1. Obtaining ICP identifiers (Clause 11.3)

Code reference

Clause 11.3

Code related audit information

The following participants must, before assuming responsibility for certain points of connection on a local network or embedded network, obtain an ICP identifier for the point of connection:

- a) a trader who has agreed to purchase electricity from an embedded generator or sell electricity to a consumer*
- b) an embedded generator who sells electricity directly to the clearing manager*
- c) a direct purchaser connected to a local network or an embedded network*
- d) an embedded network owner in relation to a point of connection on an embedded network that is settled by differencing*
- e) a network owner in relation to a shared unmetered load point of connection to the network owner's network*
- f) a network owner in relation to a point of connection between the network owner's network and an embedded network.*

ICP identifiers must be obtained for points of connection at which any of the following occur:

- a consumer purchases electricity from a trader 11.3(3)(a)*
- a trader purchases electricity from an embedded generator 11.3(3)(b)*
- a direct purchaser purchases electricity from the clearing manager 11.3(3)(c)*
- an embedded generator sells electricity directly to the clearing manager 11.3(3)(d)*
- a network is settled by differencing 11.3(3)(e)*
- there is a distributor status ICP on the parent network point of connection of an embedded network or at the point of connection of shared unmetered load 11.3(3)(f).*

Audit observation

The new connection process was examined in detail to evaluate the strength of controls.

The event detail report for 17/11/18 to 8/01/20 was reviewed to identify all new connections and the audit compliance report examined to confirm process controls and compliance.

Audit commentary

This requirement is well understood and managed by emhTrade. The process is detailed in **section 2.9**.

Audit outcome

Compliant

3.2. Providing registry information (Clause 11.7(2))

Code reference

Clause 11.7(2)

Code related audit information

Each trader must provide information to the registry manager about each ICP at which it trades electricity in accordance with Schedule 11.1.

Audit observation

The new connection, MEP nomination, and switching processes were examined in detail.

The event detail report for 17/11/18 to 8/01/20 and the audit compliance report were analysed in relation to updating of the registry.

This clause links directly to **sections 3.3** and **3.5** below, where findings on the timeliness of updates are recorded.

Audit commentary

emhTrade's processes are designed to ensure that trader information is populated as required by this clause. Late updates are recorded as non-compliance in **section 3.3**.

Audit outcome

Compliant

3.3. Changes to registry information (Clause 10 Schedule 11.1)

Code reference

Clause 10 Schedule 11.1

Code related audit information

If information provided by a trader to the registry manager about an ICP changes, the trader must provide written notice to the registry manager of the change no later than five business days after the change.

Audit observation

The process to manage status changes is discussed in detail in **sections 3.8** and **3.9**. In this section, the event detail report for 16/11/18 to 8/01/20 and the audit compliance report for the previous 12 months were analysed to determine the overall performance for that period. All late updates were checked.

Audit commentary

Status updates

emhTrade's processes have not changed in the audit period. All status updates are completed manually on the registry, once paperwork is received.

The timeliness of status updates to active (for reconnections) is set out on the table below.

Status	Year	ICPs notified greater than 5 days	Percentage on time	Average Business Days between Status Event and Status Input Dates
Active	2017	0	55%	14
	2018	1	82%	5
	2019	0	Did not occur	0

No reconnections occurred during the audit period.

The timeliness of status updates to inactive is set out in the table below.

Status	Year	ICPs notified greater than 5 days	Percentage on time	Average Business Days between Status Event and Status Input Dates
Inactive	2018	0	100%	0
	2019	2	0%	7.4

Two late updates to ready for decommissioning occurred. These were updated on the registry as soon as the paperwork was received, which was late in both instances.

Trader updates

Trader updates are manually updated on the registry.

The timeliness of trader updates is set out on the table below.

Year	ICPs notified greater than 5 days	Percentage on time	Average Business Days between Status Event and Status Input Dates
2018	3	94%	101
2019	2	99%	5.11

Two late trader updates were identified. One related to a backdated profile change caused by the MEP backdating their event which caused emhTrade to be late and the other was an ANZSIC code correction carried out as a result of the last audit.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 3.3 With: Clause 10 Schedule 11.1 From: 05-Aug-18 To: 23-May-19	Two late status updates to ready for decommissioning. Two late trader updates. Potential impact: Low Actual impact: Low Audit history: Once Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
Low	Controls are rated as strong, as emhTrade update the registry at the earliest opportunity. The risk is low as the late updates had no impact on reconciliation.		
Actions taken to resolve the issue		Completion date	Remedial action status
emhTrade had corrected all the exceptions noted		March 2020	Cleared
Preventative actions taken to ensure no further issues will occur		Completion date	
emhTrade continue to monitor daily and are able to update as soon as practical with all necessary requirements.		March 2020	

3.4. Trader responsibility for an ICP (Clause 11.18)

Code reference

Clause 11.18

Code related audit information

A trader becomes responsible for an ICP when the trader is recorded in the registry as being responsible for the ICP.

A trader ceases to be responsible for an ICP if:

- *another trader is recorded in the registry as accepting responsibility for the ICP (clause 11.18(2)(a)); or*
- *the ICP is decommissioned in accordance with clause 20 of Schedule 11.1 (clause 11.18(2)(b)).*
- *if an ICP is to be decommissioned, the trader who is responsible for the ICP must (clause 11.18(3)):*
 - *arrange for a final interrogation to take place prior to or upon meter removal (clause 11.18(3)(a)); and*
 - *advise the MEP responsible for the metering installation of the decommissioning (clause 11.18(3)(b)).*

A trader who is responsible for an ICP (excluding UML) must ensure that an MEP is recorded in the registry for that ICP (clause 11.18(4)).

A trader must not trade at an ICP (excluding UML) unless an MEP is recorded in the registry for that ICP (clause 11.18(5)).

Audit observation

Retailers Responsibility to Nominate and Record MEP in the Registry

The new connection and MEP nomination processes were discussed. An MEP nomination process flow chart was reviewed.

The registry list as at 8/01/20 and event detail report for 17/11/18 to 8/01/20 were examined to identify:

- any active ICPs that do not have an MEP recorded, and
- any MEP nomination rejections.

ICP Decommissioning

The process for the decommissioning of ICPs was examined. A selection of ten decommissioned ICPs (or all if less than ten) were checked using the typical case method of sampling to prove the process and confirm controls are in place.

Audit commentary

Retailers Responsibility to Nominate and Record MEP in the Registry

All active ICPs have a valid MEP recorded.

For new connections, emhTrade nominates the MEP in the registry when the ICP is claimed and moved to “inactive new connection in progress” status. For MEP changes, emhTrade nominates the MEP at the time the service request is issued.

All MEP nominations were accepted by the MEP. Any rejections would be identified through the daily check of registry files and notifications described in **section 2.1**.

ICP Decommissioning

ICPs that are vacant and active, or inactive are maintained in the system.

Two ICPs were decommissioned during the audit period. emhTrade had met their obligation to arrange a meter interrogation prior to or upon meter removal. The MEP notified emhTrade of the decommissioning.

Audit outcome

Compliant

3.5. Provision of information to the registry manager (Clause 9 Schedule 11.1)

Code reference

Clause 9 Schedule 11.1

Code related audit information

Each trader must provide the following information to the registry manager for each ICP for which it is recorded in the registry as having responsibility:

- a) the participant identifier of the trader, as approved by the Authority (clause 9(1)(a))*
- b) the profile code for each profile at that ICP, as approved by the Authority (clause 9(1)(b))*
- c) the metering equipment provider for each category 1 metering or higher (clause 9(1)(c))*
- d) the type of submission information the trader will provide to the RM for the ICP (clause 9(1)(ea))*
- e) if a settlement type of UNM is assigned to that ICP, either:*
 - the code ENG if the load is profiled through an engineering profile in accordance with profile class 2.1 (clause 9(1)(f)(i)); or*
 - in all other cases, the daily average kWh of unmetered load at the ICP (clause 9(1)(f)(ii)).*
 - the type and capacity of any unmetered load at each ICP (clause 9(1)(g))*
 - the status of the ICP, as defined in clauses 12 to 20 (clause 9(1)(j))*
 - except if the ICP exists for the purposes of reconciling an embedded network or the ICP has distributor status, the trader must provide the relevant business classification code applicable to the customer (clause 9(1)(k)).*

The trader must provide information specified in (a) to (j) above within five business days of trading (clause 9(2)).

The trader must provide information specified in 9(1)(k) no later than 20 business days of trading (clause 9(3))

Audit observation

The new connection process was discussed.

The event detail report from 17/11/18 to 8/01/20 and the audit compliance report were analysed to determine the overall performance for that period. All late updates were checked to identify all new connections, and the timeliness of new connection status updates.

The accuracy of all status event dates for new connections was checked by comparing the earliest active date, meter certification date (if available) and initial electrical connection date (if available) using the AC020 report. All discrepancies were checked against supporting information to confirm the correct status date.

Audit commentary

New connection information timeliness

The new connection process is described in detail in **section 2.9**. MEP nomination usually occurs when the ICP is at new connection in progress (1,12) status as part of the service request process.

The AC020 report did not record any late updates to new connection in progress status.

The timeliness of status updates to active (for new connections) is set out on the table below.

Year	ICPs notified greater than 5 days	Percentage on time	Average Business Days between Status Event and Status Input Dates
2018	0	100%	3.8
2019	6	70%	4.95

The six late updates to active were examined and found that all occurred due to staff leave over Labour weekend. Five were one day late and one was two days late.

New connection information accuracy

Active dates for new connections were compared to the distributor's initial electrical connection date, and MEP's certification date using the AC020 report. All had an active status date consistent with the meter certification date with the exception of ICP 9501100035WA6A2. The meter was certified on 21/06/19 but this was electrically connected on 17/07/19. I checked the meter reading file and no consumption was recorded prior to 17/07/19 which confirms that energy started being consumed from this date. emhTrade are checking as to how the meter was certified for the earlier date. 16 ICPs did not have an initial electrical connection date populated. The meter certification matched the active date in all instances.

The AC020 report did not identify any ICPs with initial electrical connection dates populated which had not been made active.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 3.5 With: Clause 9 Schedule 11.1 From: 18-Oct-19 To: 30-Oct-19	The registry was not updated within five business days of commencement of trading for six ICPs. Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	Controls are rated as moderate, because they are sufficient to ensure that the registry is updated on time most of the time. The risk rating is low, as the ICPs updated later were only late by 1-2 days.		
Actions taken to resolve the issue		Completion date	Remedial action status
emhTrade were able to identify and resolve as soon as practical which meant it was late by 1-2 days.		NA	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
emhTrade believes controls are in place and monitored daily.		NA	

3.6. ANZSIC codes (Clause 9 (1(k) of Schedule 11.1)

Code reference

Clause 9 (1(k) of Schedule 11.1

Code related audit information

Traders are responsible to populate the relevant ANZSIC code for all ICPs for which they are responsible.

Audit observation

The process to capture and manage ANZSIC codes was examined. The registry list file as at 21/11/19 and AC020 trader compliance report were examined.

The volume of ICPs traded by emhTrade has reduced during the audit period so I checked five ICPs with the residential code applied and all 20 ICPs that have an ANZSIC code other than residential applied to confirm the validity of the ANZSIC codes applied.

Audit commentary

ANZSIC codes are determined as part of the customer application process.

No ICPs had T99 series (unknown) ANZSIC codes, and no ICPs with meter categories above 1 had residential ANZSIC codes.

The accuracy of the ANZSIC codes for 25 ICPs were checked. All were found to be correct.

Audit outcome

Compliant

3.7. Changes to unmetered load (Clause 9(1)(f) of Schedule 11.1)

Code reference

Clause 9(1)(f) of Schedule 11.1

Code related audit information

if a settlement type of UNM is assigned to that ICP, the trader must populate:

- *the code ENG - if the load is profiled through an engineering profile in accordance with profile class 2.1 (clause 9(1)(f)(i)); or*
- *the daily average kWh of unmetered load at the ICP - in all other cases (clause 9(1)(f)(ii)).*

Audit observation

The process to identify and monitor unmetered load was discussed. The registry list file as at 8/01/20 and AC020 trader compliance report were examined to identify any ICPs with unmetered load.

Audit commentary

emhTrade does not supply any ICPs with unmetered load and does not intend to.

There are checks at the time of registration to ensure customers are eligible to be supplied by emhTrade, including a check for unmetered load. If a customer is found to have unmetered load their application will be declined.

Unmetered load details are checked as part of the monthly validation against the registry. If unmetered load is discovered for an existing customer in the future, emhTrade may implement unmetered load processes at that time, or the ICP may be switched out.

Audit outcome

Compliant

3.8. Management of “active” status (Clause 17 Schedule 11.1)

Code reference

Clause 17 Schedule 11.1

Code related audit information

The ICP status of “active” is be managed by the relevant trader and indicates that:

- *the associated electrical installations are electrically connected (clause 17(1)(a))*
- *the trader must provide information related to the ICP in accordance with Part 15, to the reconciliation manager for the purpose of compiling reconciliation information (clause 17(1)(b)).*

Before an ICP is given the “active” status, the trader must ensure that:

- *the ICP has only one customer, embedded generator, or direct purchaser (clause 17(2)(a))*
- *the electricity consumed is quantified by a metering installation or a method of calculation approved by the Authority (clause 17(2)(b)).*

Audit observation

New connections

The new connection process was examined in detail as discussed in **sections 2.9** and **3.5** above. Review of the registry list as at 8/01/20 confirmed that no ICPs had “inactive - new connection in progress” status with an initial electrical connection date populated.

The event detail report for 17/11/18 to 8/01/20 and the audit compliance report were checked and found 20 new connections were completed. 16 had no initial electrical connection date recorded but the meter certification date matched the active date. One ICP had a variance between the active date and the meter certification date. This was examined.

Reconnections

No reconnections occurred during the audit period.

The process for the management of ICP reconnection was examined. The event detail report for 17/11/18 to 8/01/20 and audit compliance report were analysed, and the findings on the timeliness of registry updates are recorded in **section 3.3**.

Audit commentary

emhTrade’s system will not allow more than one party per ICP, nor will it allow an ICP to be set up without both a meter and MEP. emhTrade does not accept unmetered ICPs.

New connections

emhTrade processed 20 new connections during the audit period. ICP 9501100035WA6A2 had a discrepancy between the active date recorded by emhTrade and the meter certification date. The meter was certified on 21/06/19 but this was electrically connected on 17/0719. I checked the meter reading file and no consumption was recorded prior to 17/07/19 which confirms that energy started being consumed from this date. emhTrade are checking as to how the meter was certified for the earlier date.

Reconnections

Status updates are processed manually on the registry once reconnection paperwork is received confirming the correct status and status date. No reconnections have occurred during the audit period.

Audit outcome

Compliant

3.9. Management of “inactive” status (Clause 19 Schedule 11.1)

Code reference

Clause 19 Schedule 11.1

Code related audit information

The ICP status of “inactive” must be managed by the relevant trader and indicates that:

- *electricity cannot flow at that ICP (clause 19(a)); or*
- *submission information related to the ICP is not required by the reconciliation manager for the purpose of compiling reconciliation information (clause 19(b)).*

Audit observation

The list file as at 8/01/20 was examined and confirmed no ICPs were at “inactive - new connection in progress status”.

The event detail report for 17/11/18 to 8/01/20 was examined to identify all status changes to inactive. Two disconnections were completed during the period, and I checked that the correct status and dates were applied.

Audit commentary

Disconnections are completed remotely. Status updates are processed manually on the registry once disconnection paperwork is received confirming the correct status and status date.

Two disconnections were processed during the audit period. The timeliness of these is discussed in **section 3.3**. I confirmed that the correct status and date were applied.

Audit outcome

Compliant

3.10. ICPs at new or ready status for 24 months (Clause 15 Schedule 11.1)

Code reference

Clause 15 Schedule 11.1

Code related audit information

If an ICP has had the status of "New" or "Ready" for 24 calendar months or more, the distributor must ask the trader whether it should continue to have that status, and must decommission the ICP if the trader advises the ICP should not continue to have that status.

Audit observation

Whilst this is a Distributor’s code obligation, I investigated whether any queries had been received from Distributors in relation to ICPs at the “new” or “ready” status for more than 24 months and what process is in place to manage and respond to such requests.

A registry list as at 8/01/2020 was reviewed to identify all ICPs with “new” or “ready” status and emhTrade recorded as the proposed trader.

Audit commentary

emhTrade completed 20 new connections during the audit period.

No ICPs currently have “new” or “ready” status and emhTrade recorded as the proposed trader. No requests for information on “new” or “ready” ICPs have been received from distributors. If received these will be actioned on a case by case basis.

emhTrade have adopted the last audit’s recommendation that ICP’s at “new” or “ready” status are monitored. This is checked as part of the daily registry checks.

Audit outcome

Compliant

4. PERFORMING CUSTOMER AND EMBEDDED GENERATOR SWITCHING

4.1. Inform registry of switch request for ICPs - standard switch (Clause 2 Schedule 11.3)

Code reference

Clause 2 Schedule 11.3

Code related audit information

The standard switch process applies where a trader and a customer or embedded generator enters into an arrangement in which the trader commences trading electricity with the customer or embedded generator at a non-half hour or unmetered ICP at which another trader supplies electricity, or the trader assumes responsibility for such an ICP.

If the uninvited direct sale agreement applies to an arrangement described above, the gaining trader must identify the period within which the customer or embedded generator may cancel the arrangement in accordance with section 36M of the Fair Trading Act 1986. The arrangement is deemed to come into effect on the day after the expiry of that period.

A gaining trader must advise the registry manager of a switch no later than two business days after the arrangement comes into effect and include in its advice to the registry manager that the switch type is TR and one or more profile codes associated with that ICP.

Audit observation

The switch gain process was examined to determine when emhTrade deem all conditions to be met.

A typical sample of five transfer switches were checked to confirm that they were notified to the registry within two business days, and that the correct switch type was selected.

I walked through the application process and confirmed that information is collected to determine the correct switch type.

Audit commentary

emhTrade's processes are compliant with the requirements of Section 36M of the Fair Trading Act 1986. NT files are sent as soon as all pre-conditions are met, and the withdrawal process is used if the customer changes their mind.

Switch type is selected based on information provided by the customer on application. The customer is asked whether they have recently moved into the property and their move in date as part of the application process.

The five NT files checked were sent within two business days of pre-conditions being cleared, and the correct switch type was selected.

Audit outcome

Compliant

4.2. Losing trader response to switch request and event dates - standard switch (Clauses 3 and 4 Schedule 11.3)

Code reference

Clauses 3 and 4 Schedule 11.3

Code related audit information

Within three business days after receiving notice of a switch from the registry manager, the losing trader must establish a proposed event date. The event date must be no more than 10 business days after the date of receipt of such notification, and in any 12-month period, at least 50% of the event dates must be no more than five business days after the date of notification. The losing trader must then:

- *provide acknowledgement of the switch request by (clause 3(a) of Schedule 11.3):*
 - o *providing the proposed event date to the registry manager and a valid switch response code (clause 3(a)(i) and (ii) of Schedule 11.3); or*
 - o *providing a request for withdrawal of the switch in accordance with clause 17 (clause 3(c) of Schedule 11.3).*

When establishing an event date for clause 4, the losing trader may disregard every event date established by the losing trader for an ICP for which when the losing trader received notice from the registry manager under clause 22(a) the losing trader had been responsible for less than two months.

Audit observation

An event detail report for 17/11/18 to 8/01/20 was reviewed to:

- identify AN files issued by emhTrade during the period; and
- assess compliance with the setting of event dates requirement.

I checked typical sample of ten ANs to confirm the correct codes were applied.

The switch breach report was examined for the audit period.

Audit commentary

The switches are entered via the registry portal.

Event dates set by losing trader must be no more than 10 business days after receipt of an NT file. Over a 12-month period 50% of event dates must be within five business days.

All transfer AN files were examined on the event detail report. All proposed event dates were within five business days of NT receipt.

Total transfer switches	Total over 10 business days	Total within 10 business days	Total within 5 business days	% within 5 business days
20	0	20	20	100%

All switches response codes are expected to be “AD” as all sites are AMI. The AN response codes were correctly applied. I noted that ICP 1001299629LC8BA was sent with an “AD” code but it is indicated on the registry as AMI non-communicating. This was examined and found that the site is HHR certified and HHR data was being received for this ICP, therefore the correct code was sent.

The switch breach report confirmed all AN files were sent within the allowable timeframes.

Audit outcome

Compliant

4.3. Losing trader must provide final information - standard switch (Clause 5 Schedule 11.3)

Code reference

Clause 5 Schedule 11.3

Code related audit information

If the losing trader provides information to the registry manager in accordance with clause 3(a) of Schedule 11.3 with the required information, no later than five business days after the event date, the losing trader must complete the switch by:

- *providing event date to the registry manager (clause 5(a)); and*
- *provide to the gaining trader a switch event meter reading as at the event date, for each meter or data storage device that is recorded in the registry with accumulator of C and a settlement indicator of Y (clause 5(b)); and*
- *if a switch event meter reading is not a validated reading, provide the date of the last meter reading (clause 5(c)).*

Audit observation

An event detail report for the period from 17/11/18 to 8/01/20 was reviewed to identify all CS files issued by emhTrade. The accuracy of the content of CS files was confirmed by checking a sample of five records. The content checked included:

- correct identification of meter readings and correct date of last meter reading,
- accuracy of meter readings, and
- accuracy of average daily consumption.

I checked the average daily consumption for all transfer CS files and did not identify any transfer CS files with negative average daily consumption, zero average daily consumption, or average daily consumption over 200 kWh.

The process to manage the sending of the CS file within five business days of the event date was examined, and the switch breach history report was reviewed to identify late CS files.

Audit commentary

emhTrade uses Slack to monitor switch progress and checks the registry daily to identify files that require processing. The switch breach history report recorded nine late transfer CS files. I examined all and found one to be genuinely late due to the late receipt of the reading from the MEP. It was one day late and was sent as soon as the read information was received. This is recorded as non-compliance below.

The Registry Functional Specification v22.21 states that average daily consumption within the CS file should be the average kWh per day for the two most recent validated reads. Because emhTrade receives daily readings, estimated daily consumption is calculated as the average daily consumption over the period of supply. While this is not technically consumption for the last read to read period, it provides a reasonable indication of the average daily consumption.

The accuracy of the content of CS files was confirmed by checking a sample of five transfer CS files. The sample checked found meter readings, read types were all recorded correctly. As discussed above the average daily consumption figure is calculated over the period of supply, but this does not meet the code definition. This is recorded as non-compliance. emhTrade are reviewing how this is to be calculated going forward. The last actual read date reflects the last actual read received by emhTrade at the time the CS was processed, which in some instances was after the switch event date. This is expected to be within emhTrade's period of supply. This is recorded as non-compliance.

The two files with zero and 11 files with high average daily consumption were checked. The estimated daily consumption was found to be recorded consistently with the current calculation method but as discussed above this does not meet the code requirements.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 4.3 With: Clause 5 of Schedule 11.3 From: 17-Nov-18 To: 8-Jan-20	One late CS file. The estimated daily kWh values were not consistent with the average consumption for the last read to read period in transfer CS files. Last read date incorrectly recorded for at least one CS file. Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	Controls are rated as moderate as the process to complete CS files is robust, but the non-compliance was caused by a misunderstanding of two aspects of the CS file content. The audit risk rating is low, as the current calculation of the average daily consumption will provide the gaining trader a more accurate average daily consumption than the average of the last read to read period which will effectively be a snapshot of one day's supply.		
Actions taken to resolve the issue		Completion date	Remedial action status
emhTrade believes our calculations are validated given we are an HHR participant. Further enquiries are being determined and we seek further guidance from the Authority.		April 2020	Disputed
Preventative actions taken to ensure no further issues will occur		Completion date	
emhTrade will be requesting further guidance from the Authority.		April 2020	

4.4. Retailers must use same reading - standard switch (Clause 6(1) and 6A Schedule 11.3)

Code reference

Clause 6(1) and 6A Schedule 11.3

Code related audit information

The losing trader and the gaining trader must both use the same switch event meter reading as determined by the following procedure:

- *if the switch event meter reading provided by the losing trader differs by less than 200 kWh from a value established by the gaining trader, the gaining trader must use the losing trader's validated meter reading or permanent estimate (clause 6(a)); or*
- *the gaining trader may dispute the switch meter reading if the validated meter reading or permanent estimate provided by the losing trader differs by 200 kWh or more (clause 6(b)).*

If the gaining trader disputes a switch meter reading because the switch event meter reading provided by the losing trader differs by 200 kWh or more, the gaining trader must, within 4 calendar months of the registry manager giving the gaining trader written notice of having received information about the switch completion, provide to the losing trader a changed switch event meter reading supported by 2 validated meter readings.

- *the losing trader can choose not to accept the reading however must advise the gaining trader no later than five business days after receiving the switch event meter reading from the gaining trader (clause 6A(a)); or*
- *if the losing trader notifies its acceptance or does not provide any response, the losing trader must use the switch event meter reading supplied by the gaining trader (clause 6A(b)).*

Audit observation

The process for the management of read change requests was examined.

The event detail report for 17/11/18 to 8/01/20 was reviewed to identify all read change requests and acknowledgements during the audit period.

- One RR file was issued to emhTrade by other traders for transfer switches. I checked this to confirm that emhTrade's system reflected the outcome of the read request change.
- Two RR files were issued by emhTrade for transfer switches. Both were accepted. I reviewed both of the files to confirm that the content was accurate, and that emhTrade's system reflected the outcome of the read change process.

I also checked a sample of five estimated CS files provided by other traders where no RR was issued to determine whether the correct readings were recorded in emhTrade's system.

The switch breach history report was reviewed to identify late RR and AC files.

Audit commentary

emhTrade identifies ICPs which require meter read changes through its daily Admin Panel checks described in **section 2.1**. Where there is a difference between the switch reading and reading calculated from AMI data of more than ± 50 kWh an RR request is issued.

emhTrade's switch read adjustment process ensures that the correct switch readings are applied for settlement. Switch event readings (CS, or accepted RR) take precedence over all other readings in their system. If there is a difference between the agreed switch reading and AMI data, the consumption difference is automatically spread over 43 days.

The two RR files issued by emhTrade for transfer switches were reviewed. In both cases, emhTrade had the correct readings recorded in their system, the requests were supported by AMI data, and the content of the files was correct.

Review of the one transfer CS files with estimated reads where no RR was issued confirmed that the correct readings were recorded in emhTrade's system. RRs in these instances are not requested because the difference was not considered to be material and was less than emhTrade's ± 50 kWh threshold.

The switch breach report recorded no late RR files.

Audit outcome

Compliant

4.5. Non-half hour switch event meter reading - standard switch (Clause 6(2) and (3) Schedule 11.3)

Code reference

Clause 6(2) and (3) Schedule 11.3

Code related audit information

If the losing trader trades electricity from a non-half hour meter, with a switch event meter reading that is not from an AMI certified meter flagged Y in the registry: and

- *the gaining trader will trade electricity from a meter with a half hour submission type in the registry (clause 6(2)(b));*
- *the gaining trader within five business days after receiving final information from the registry manager, may provide the losing trader with a switch event meter reading from that meter. The losing trader must use that switch event meter reading.*

Audit observation

The event detail report for the period from 17/11/18 to 8/01/20 was reviewed to identify all read change requests and acknowledgements where clause 6(2) and (3) of schedule 11.3 applied.

Audit commentary

Other retailers cannot issue read change requests to emhTrade under clause 6(2) and (3) of schedule 11.3 because emhTrade is a HHR only trader.

Review of the event detail report identified one RR file issued by emhTrade within five business days of the CS receipt, where the CS file contained estimated readings. This was accepted by the losing trader.

Audit outcome

Compliant

4.6. Disputes - standard switch (Clause 7 Schedule 11.3)

Code reference

Clause 7 Schedule 11.3

Code related audit information

A losing trader or gaining trader may give written notice to the other that it disputes a switch event meter reading provided under clauses 1 to 6. Such a dispute must be resolved in accordance with clause 15.29 (with all necessary amendments).

Audit observation

I confirmed with emhTrade whether any disputes have needed to be resolved in accordance with this clause.

Audit commentary

emhTrade confirmed that no disputes have needed to be resolved in accordance with this clause.

Audit outcome

Compliant

4.7. Gaining trader informs registry of switch request - switch move (Clause 9 Schedule 11.3)

Code reference

Clause 9 Schedule 11.3

Code related audit information

The switch move process applies where a gaining trader has an arrangement with a customer or embedded generator to trade electricity at an ICP using non half-hour metering or an unmetered ICP, or to assume responsibility for such an ICP, and no other trader has an agreement to trade electricity at that ICP, this is referred to as a switch move and the following provisions apply:

If the "uninvited direct sale agreement" applies, the gaining trader must identify the period within which the customer or embedded generator may cancel the arrangement in accordance with section 36M of the Fair Trading Act 1986. The arrangement is deemed to come into effect on the day after the expiry of that period.

In the event of a switch move, the gaining trader must advise the registry manager of a switch and the proposed event date no later than two business days after the arrangement comes into effect.

In its advice to the registry manager the gaining trader must include:

- *a proposed event date (clause 9(2)(a)); and*
- *that the switch type is "MI" (clause 9(2)(b)); and*
- *one or more profile codes of a profile at the ICP (clause 9(2)(c)).*

Audit observation

The switch gain process was examined to determine when emhTrade deem all conditions to be met.

A typical sample of five switch moves were checked to confirm that they were notified to the registry within two business days, and that the correct switch type was selected.

I walked through the application process and confirmed that information is collected to determine the correct switch type.

Audit commentary

emhTrade's processes are compliant with the requirements of Section 36M of the Fair Trading Act 1986. NT files are sent as soon as all pre-conditions are met, and the withdrawal process is used if the customer changes their mind.

Switch type is selected based on information provided by the customer on application. The customer is asked whether they have recently moved into the property and their move in date as part of the application process.

The five NT files checked had the correct switch type selected and all were sent on time.

Audit outcome

Compliant

4.8. Losing trader provides information - switch move (Clause 10(1) Schedule 11.3)

Code reference

Clause 10(1) Schedule 11.3

Code related audit information

10(1) Within five business days after receiving notice of a switch move request from the registry manager—

- *10(1)(a) If the losing trader accepts the event date proposed by the gaining trader, the losing trader must complete the switch by providing to the registry manager:*
 - *confirmation of the switch event date; and*
 - *a valid switch response code; and*
 - *final information as required under clause 11; or*
- *10(1)(b) If the losing trader does not accept the event date proposed by the gaining trader, the losing trader must acknowledge the switch request to the registry manager and determine a different event date that—*
 - *is not earlier than the gaining trader's proposed event date, and*
 - *is no later than 10 business days after the date the losing trader receives notice, or*
- *10(1)(c) request that the switch be withdrawn in accordance with clause 17.*

Audit observation

An event detail report for 01/11/17 to 16/11/18 was reviewed to:

- identify AN files issued by emhTrade during the period; and
- assess compliance with the setting of event dates requirement.

I checked all ANs to confirm the correct codes were applied.

The switch breach report was examined for the audit period.

Audit commentary

All 49 switch move AN files were examined on the event detail report:

- no ANs had proposed event dates later than 10 business days after receipt of the NT, and
- none were backdated earlier than the proposed transfer date.

The AD and PD response codes were applied for move switches. The AN response codes were correctly applied for the all ANs sent.

The switch breach report found no genuine breaches. All AN files were sent within the allowable timeframes.

Audit outcome

Compliant

4.9. Losing trader determines a different date - switch move (Clause 10(2) Schedule 11.3)

Code reference

Clause 10(2) Schedule 11.3

Code related audit information

If the losing trader determines a different date, the losing trader must also complete the switch by providing to the registry manager as described in sub-clause (1)(a):

- *the event date proposed by the losing trader; and*
- *a valid switch response code; and*
- *final information as required under clause 1.*

Audit observation

An event detail report for 17/11/18 to 8/01/20 was reviewed to:

- identify AN files issued by emhTrade during the period; and
- assess compliance with the setting of event dates requirement.

Audit commentary

Switches were completed as required by this clause.

The AN response codes were correctly applied for the all ANs sent.

Audit outcome

Compliant

4.10. Losing trader must provide final information - switch move (Clause 11 Schedule 11.3)

Code reference

Clause 11 Schedule 11.3

Code related audit information

The losing trader must provide final information to the registry manager for the purposes of clause 10(1)(a)(ii), including—

- *the event date (clause 11(a)); and*
- *a switch event meter reading as at the event date for each meter or data storage device that is recorded in the registry with an accumulator type of C and a settlement indicator of Y (clause 11(b)); and*
- *if the switch event meter reading is not a validated meter reading, the date of the last meter reading of the meter or storage device (clause (11(c)).*

Audit observation

An event detail report for the period from 17/11/18 to 8/01/20 was reviewed, to identify CS files issued by emhTrade. The accuracy of the content of CS files was confirmed by checking a sample of five records. The content checked included:

- correct identification of meter readings and correct date of last meter reading,
- accuracy of meter readings, and
- accuracy of average daily consumption.

I checked the average daily consumption for all transfer CS files, and identified:

- none with negative average daily consumption,
- four with zero average daily consumption, and
- one with average daily consumption over 200 kWh.

The three files with zero or high average daily consumption were checked.

The process to manage the sending of the CS file within five business days of the event date was examined, and the switch breach history report was reviewed to identify late CS files. All late files were checked.

Audit commentary

emhTrade uses Slack to monitor switch progress and checks the registry daily to identify files that require processing. The switch breach history report recorded 14 late switch move CS files. These were examined and found five late CS files. These were late due to human error.

The Registry Functional Specification v22.21 states that average daily consumption within the CS file should be the average kWh per day for the two most recent validated reads. Because emhTrade receives daily readings, estimated daily consumption is calculated as the average daily consumption over the period of supply. While this is not technically consumption for the last read to read period, it provides a reasonable indication of the average daily consumption.

The accuracy of the content of CS files was confirmed by checking a sample of five switch move CS files. The sample checked found meter readings, read types were all recorded correctly. As discussed above the average daily consumption figure is calculated over the period of supply, but this does not meet the code definition, and this is recorded as non-compliance. emhTrade are reviewing how this is to be calculated going forward. The last actual read date reflects the last actual read received by emhTrade at the time the CS was processed, which in some instances was after the switch event date. This is expected to be within emhTrade's period of supply. This is recorded as non-compliance.

The four files with zero and three files with high average daily consumption were checked. The estimated daily consumption was found to be recorded consistently with the current calculation method but as discussed above this does not meet the code requirements.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 4.10 With: Clause 11 of Schedule 11.3 From: 17-Nov-18 To: 8-Jan-20	Five late CS files. The estimated daily kWh values were not consistent with the average consumption for the last read to read period in transfer CS files. Last read date incorrectly recorded for at least one CS file. Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	Controls are rated as moderate as the process to complete CS files is robust, but the non-compliance was caused by a misunderstanding of two aspects of the CS file content. The audit risk rating is low, as the current calculation of the average daily consumption will provide the gaining trader a more accurate average daily consumption than the average of the last read to read period which will effectively be a snapshot of one day's supply.		
Actions taken to resolve the issue		Completion date	Remedial action status
As per comments noted on Audit Ref: 4.3.		See 4.3	Disputed
Preventative actions taken to ensure no further issues will occur		Completion date	
As per comments noted on Audit Ref: 4.3.		See 4.3	

4.11. Gaining trader changes to switch meter reading - switch move (Clause 12 Schedule 11.3)

Code reference

Clause 12 Schedule 11.3

Code related audit information

The gaining trader may use the switch event meter reading supplied by the losing trader or may, at its own cost, obtain its own switch event meter reading. If the gaining trader elects to use this new switch event meter reading, the gaining trader must advise the losing trader of the switch event meter reading and the actual event date to which it refers as follows:

- *if the switch meter reading established by the gaining trader differs by less than 200 kWh from that provided by the losing trader, both traders must use the switch event meter reading provided by the gaining trader (clause 12(2)(a)); or*

- *if the switch event meter reading provided by the losing trader differs by 200 kWh or more from a value established by the gaining trader, the gaining trader may dispute the switch meter reading. In this case, the gaining trader, within 4 calendar months of the date the registry manager gives the gaining trader written notice of having received information about the switch completion, must provide to the losing trader a changed validated meter reading or a permanent estimate supported by 2 validated meter readings and the losing trader must either (clause 12(2)(b) and clause 12(3)):*
- *advise the gaining trader if it does not accept the switch event meter reading and the losing trader and the gaining trader must resolve the dispute in accordance with the disputes procedure in clause 15.29 (with all necessary amendments) (clause 12(3)(a)); or*
- *if the losing trader notifies its acceptance or does not provide any response, the losing trader must use the switch event meter reading supplied by the gaining trader (clause 12(3)(b)).*

12(2A) If the losing trader trades electricity from a non-half hour meter, with a switch event meter reading that is not from an AMI certified meter flagged Y in the registry,

- *the gaining trader will trade electricity from a meter with a half hour submission type in the registry (clause 12(2A)(b));*
- *the gaining trader no later than five business days after receiving final information from the registry manager, may provide the losing trader with a switch event meter reading from that meter. The losing trader must use that switch event meter reading (clause 12(2B)).*

Audit observation

The process for the management of read change requests was examined.

The event detail report for 17/11/18 to 8/01/20 was reviewed to identify all read change requests and acknowledgements during the audit period. One RR and four AC files were issued by emhTrade for switch moves. These were examined.

I also checked a sample of five estimated CS files provided by other traders where no RR was issued to determine whether the correct readings were recorded in emhTrade's system.

The switch breach history report was reviewed to identify late RR and AC files.

Audit commentary

emhTrade identifies ICPs which require meter read changes through its daily Admin Panel checks described in **section 2.1**. Where there is a difference between the switch reading and reading calculated from AMI data of more than ± 50 kWh an RR request is issued.

emhTrade's switch read adjustment process ensures that the correct switch readings are applied for settlement. Switch event readings (CS, or accepted RR) take precedence over all other readings in their system. If there is a difference between the agreed switch reading and AMI data, the consumption difference is automatically spread over 43 days.

One read change for a switch move was initiated during the audit period. This was examined and found emhTrade had the correct reading recorded in their system, the request was supported by AMI data, and the content of the file was correct.

The switch breach report recorded no late RR files.

Review of the one CS file with an estimated read where no RR was issued confirmed that the correct reading was recorded in emhTrade's system. An RR was not requested because the difference was not considered to be material and was less than emhTrade's ± 50 kWh threshold.

Audit outcome

Compliant

4.12. Gaining trader informs registry of switch request - gaining trader switch (Clause 14 Schedule 11.3)

Code reference

Clause 14 Schedule 11.3

Code related audit information

The gaining trader switch process applies when a trader has an arrangement with a customer or embedded generator to trade electricity at an ICP at which the losing trader trades electricity with the customer or embedded generator, and one of the following applies at the ICP:

- *the gaining trader will trade electricity through a half hour metering installation that is a category 3 or higher metering installation; or*
- *the gaining trader will trade electricity through a non-AMI half hour metering installation and the losing trader trades electricity through a non-AMI non half hour metering installation; or*
- *the gaining trader will trade electricity through a non-AMI non half hour metering installation and the losing trader trades electricity through a non-AMI half hour metering installation*

If the uninvited direct sale agreement applies to an arrangement described above, the gaining trader must identify the period within which the customer or embedded generator may cancel the arrangement in accordance with section 36M of the Fair Trading Act 1986. The arrangement is deemed to come into effect on the day after the expiry of that period.

A gaining trader must advise the registry manager of the switch and expected event date no later than 3 business days after the arrangement comes into effect.

14(2) The gaining trader must include in its advice to the registry manager:

- a) a proposed event date; and*
- b) that the switch type is HH.*

14(3) The proposed event date must be a date that is after the date on which the gaining trader advises the registry manager, unless clause 14(4) applies.

14(4) The proposed event date is a date before the date on which the gaining trader advised the registry manager, if:

14(4)(a) – the proposed event date is in the same month as the date on which the gaining trader advised the registry manager; or

14(4)(b) – the proposed event date is no more than 90 days before the date on which the gaining trader advises the registry manager and this date is agreed between the losing and gaining traders.

Audit observation

The event detail report for the period from 17/11/18 to 8/01/20 was reviewed to identify all gaining trader switches.

The HH switch process was examined, and any HH NTs were checked to confirm that these were notified to the registry within three business days.

Audit commentary

emhTrade did not provide any HH NT files during the audit period.

Processes are in place to ensure that NT files for HH switches are sent as soon as all pre-conditions are met.

Audit outcome

Compliant

4.13. Losing trader provision of information - gaining trader switch (Clause 15 Schedule 11.3)

Code reference

Clause 15 Schedule 11.3

Code related audit information

Within three business days after the losing trader is informed about the switch by the registry manager, the losing trader must:

15(a) - provide to the registry manager a valid switch response code as approved by the Authority; or

15(b) - provide a request for withdrawal of the switch in accordance with clause 17.

Audit observation

The HH switch process was examined.

The event detail report for 17/11/18 to 8/01/208 was examined and confirmed that no HH switches were requested by other traders and emhTrade did not send any HH AN files during the period.

Audit observation

emhTrade did not provide any HH AN files during the audit period.

Processes are in place to ensure that correct AN codes are applied for HH switches.

Audit outcome

Compliant

4.14. Gaining trader to advise the registry manager - gaining trader switch (Clause 16 Schedule 11.3)

Code reference

Clause 16 Schedule 11.3

Code related audit information

The gaining trader must complete the switch no later than three business days, after receiving the valid switch response code, by advising the registry manager of the event date.

If the ICP is being electrically disconnected, or if metering equipment is being removed, the gaining trader must either-

16(a)- give the losing trader or MEP for the ICP an opportunity to interrogate the metering installation immediately before the ICP is electrically disconnected or the metering equipment is removed; or

16(b)- carry out an interrogation and, no later than five business days after the metering installation is electrically disconnected or removed, advise the losing trader of the results and metering component numbers for each data channel in the metering installation.

Audit observation

The HH switching process was examined

The switch breach report was analysed.

Audit observation

emhTrade uses Slack to monitor switch progress and checks the registry daily to identify files that require processing.

emhTrade did not provide any HH CS files during the audit period.

Audit outcome

Compliant

4.15. Withdrawal of switch requests (Clauses 17 and 18 Schedule 11.3)

Code reference

Clauses 17 and 18 Schedule 11.3

Code related audit information

A losing trader or gaining trader may request that a switch request be withdrawn at any time until the expiry of two calendar months after the event date of the switch.

If a trader requests the withdrawal of a switch, the following provisions apply:

- *for each ICP, the trader withdrawing the switch request must provide the registry manager with (clause 18(c)):*
 - o *the participant identifier of the trader making the withdrawal request (clause 18(c)(i)); and*
 - o *the withdrawal advisory code published by the Authority. (clause 18(c)(ii))*
- *within five business days after receiving notice from the registry manager of a switch, the trader receiving the withdrawal must advise the registry manager that the switch withdrawal request is accepted or rejected. A switch withdrawal request must not become effective until accepted by the trader who received the withdrawal (clause 18(d))*
- *on receipt of a rejection notice from the registry manager, in accordance with clause 18(d), a trader may re-submit the switch withdrawal request for an ICP in accordance with clause 18(c). All switch withdrawal requests must be resolved within 10 business days after the date of the initial switch withdrawal request (clause 18(e))*
- *if the trader requests that a switch request be withdrawn, and the resolution of that switch withdrawal request results in the switch proceeding, within two business days after receiving notice from the registry manager in accordance with clause 22(b), the losing trader must comply with clauses 3,5,10 and 11 (whichever is appropriate) and the gaining trader must comply with clause 16 (clause 18(f)).*

Audit observation

The switch withdrawal process was examined.

The event detail report for 17/11/18 to 8/01/20 was reviewed to:

- identify all switch withdrawal requests (NWs) issued by emhTrade, and check the content of a sample of two (or all) withdrawals per withdrawal code,
- identify all switch withdrawal acknowledgements (AWs) issued by emhTrade and check all AW rejections, and
- confirm timeliness of withdrawal requests (as this is not currently being identified in the switch breach report); an extreme case sample of ten late withdrawal requests were checked.

The switch breach report was checked for any late NW and AW files.

Audit commentary

21 NWs were issued by emhTrade.

The content of a sample of 10 files were checked, including the two files which had been rejected. All had the correct withdrawal reasons.

The switch breach report did not record any late NW or AW files. Analysis of the event detail report found three NWs were issued more than two months after the switch event date. These were examined and found:

- two related to the same ICP and was for a wrong premise switched in which took some time to uncover,
- the other was due to the incorrect date (wrong year) being input due to human error and was withdrawn the same day as it was issued as it was for a year earlier.

11 NWs were issued to emhTrade, and all were accepted.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 4.15 With: Clause 17 of Schedule 11.3 From: 5-Jan-18 To: 25-Feb-19	Three late switch withdrawals. Potential impact: Low Actual impact: Low Audit history: None Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
Low	Controls are rated as strong as the processes to manage this are robust and all were processed as soon as possible. The audit risk rating is low, as this affected only two ICPs.		
Actions taken to resolve the issue		Completion date	Remedial action status
emhTrade believes no issue has occurred as there were agreed exceptions with the customer and correction of dates due to new year eg; 2019 instead of 2018.		NA	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
No further comments as emhTrade have strong controls in this area.		NA	

4.16. Metering information (Clause 21 Schedule 11.3)

Code reference

Clause 21 Schedule 11.3

Code related audit information

For an interrogation or validated meter reading or permanent estimate carried out in accordance with Schedule 11.3:

21(a) - the trader who carries out the interrogation, switch event meter reading must ensure that the interrogation is as accurate as possible, or that the switch event meter reading is fair and reasonable.

21(b) and (c) - the cost of every interrogation or switch event meter reading carried out in accordance with clauses 5(b) or 11(b) or (c) must be met by the losing trader. The costs in every other case must be met by the gaining trader.

Audit observation

The meter reading process in relation to meter reads for switching purposes was examined.

Audit commentary

All meter readings used in the switching process are validated meter readings or permanent estimates. emhTrade's policy regarding the management of meter reading expenses is compliant.

Audit outcome

Compliant

4.17. Switch saving protection (Clause 11.15AA to 11.15AB)

Code reference

Clause 11.15AA to 11.15AB

Code related audit information

A trader that buys electricity from the clearing manager may elect to have a switch saving protection by giving notice to the Authority in writing.

If a protected trader enters into an arrangement with a customer of another trader (the losing trader), or a trader enters into an arrangement with a customer of a protected trader, to commence trading electricity with the customer, the losing trader must not, by any means, initiate contact with the customer to attempt to persuade the customer to terminate the arrangement during the period from the receipt of the NT to the event date of the switch including by:

11.15AB(4)(a)- making a counter offer to the customer; or

11.15AB(4)(b)- offering an enticement to the customer.

Audit observation

The Electricity Registry switch save protected retailer list was examined.

Win-back processes were examined to determine whether they are compliant. The event detail report for 17/11/18 to 8/01/20 was analysed to identify all withdrawn switches with a CX code applied prior to the switch completion date for any switch save protected retailer.

Audit commentary

emhTrade is not a switch save protected retailer.

emhTrade contacts the customers for ICPs requested by another retailer only to confirm that the switch request is valid. No win-back activity is initiated with lost customers during the switch.

The event detail report identified three CX coded switch withdrawal requests; all were sent after the switch was completed.

Audit outcome

Compliant

5. MAINTENANCE OF UNMETERED LOAD

5.1. Maintaining shared unmetered load (Clause 11.14)

Code reference

Clause 11.14

Code related audit information

The trader must adhere to the process for maintaining shared unmetered load as outlined in clause 11.14:

11.14(2) - The distributor must give written notice to the traders responsible for the ICPs across which the unmetered load is shared, of the ICP identifiers of the ICPs.

11.14(3) - A trader who receives such a notification from a distributor must give written notice to the distributor if it wishes to add or omit any ICP from the ICPs across which unmetered load is to be shared.

11.14(4) - A distributor who receives such a notification of changes from the trader under (3) must give written notice to the registry manager and each trader responsible for any of the ICPs across which the unmetered load is shared.

11.14(5) - If a distributor becomes aware of any change to the capacity of a shared unmetered load ICP or if a shared unmetered load ICP is decommissioned, it must give written notice to all traders affected by that change as soon as practicable after that change or decommissioning.

11.14(6) - Each trader who receives such a notification must, as soon as practicable after receiving the notification, adjust the unmetered load information for each ICP in the list for which it is responsible to ensure that the entire shared unmetered load is shared equally across each ICP.

11.14(7) - A trader must take responsibility for shared unmetered load assigned to an ICP for which the trader becomes responsible as a result of a switch in accordance with Part 11.

11.14(8) - A trader must not relinquish responsibility for shared unmetered load assigned to an ICP if there would then be no ICPs left across which that load could be shared.

11.14(9) - A trader can change the status of an ICP across which the unmetered load is shared to inactive status, as referred to in clause 19 of Schedule 11.1. In that case, the trader is not required to give written notice to the distributor of the change. The amount of electricity attributable to that ICP becomes UFE.

Audit observation

The process to identify and monitor unmetered load was discussed. The registry list for 17/11/18 to 16/11/18 was reviewed to identify all ICPs with unmetered load.

Audit commentary

emhTrade does not supply any ICPs with unmetered load and does not intend to.

Processes to prevent ICPs with unmetered load from switching in, and to monitor existing ICPs for addition of unmetered load are discussed in **section 3.7**.

Audit outcome

Compliant

5.2. Unmetered threshold (Clause 10.14 (2)(b))

Code reference

Clause 10.14 (2)(b)

Code related audit information

The reconciliation participant must ensure that unmetered load does not exceed 3,000 kWh per annum, or 6,000 kWh per annum if the load is predictable and of a type approved and published by the Authority.

Audit observation

The process to identify and monitor unmetered load was discussed. The registry list for 01/11/17 to 16/11/18 was reviewed to identify all ICPs with unmetered load.

Audit commentary

emhTrade does not supply any ICPs with unmetered load and does not intend to.

Audit outcome

Compliant

5.3. Unmetered threshold exceeded (Clause 10.14 (5))

Code reference

Clause 10.14 (5)

Code related audit information

If the unmetered load limit is exceeded the retailer must:

- *within 20 business days, commence corrective measure to ensure it complies with Part 10*
- *within 20 business days of commencing the corrective measure, complete the corrective measures*
- *no later than 10 business days after it becomes aware of the limit having been exceeded, advise each participant who is or would be expected to be affected of:*
 - o *the date the limit was calculated or estimated to have been exceeded*
 - o *the details of the corrective measures that the Retailer proposes to take or is taking to reduce the unmetered load.*

Audit observation

The process to identify and monitor unmetered load was discussed. The registry list for 01/11/17 to 16/11/18 was reviewed to identify all ICPs with unmetered load.

Audit commentary

emhTrade does not supply any ICPs with unmetered load and does not intend to.

Audit outcome

Compliant

5.4. Distributed unmetered load (Clause 11 Schedule 15.3, Clause 15.37B)

Code reference

Clause 11 Schedule 15.3, Clause 15.37B

Code related audit information

An up-to-date database must be maintained for each type of distributed unmetered load for which the retailer is responsible. The information in the database must be maintained in a manner that the resulting submission information meets the accuracy requirements of clause 15.2.

A separate audit is required for distributed unmetered load data bases.

The database must satisfy the requirements of Schedule 15.5 with regard to the methodology for deriving submission information.

Audit observation

The process to identify and monitor unmetered load was discussed. The registry list for 01/11/17 to 16/11/18 was reviewed to identify all ICPs with unmetered load.

Audit commentary

emhTrade does not supply any ICPs with unmetered load and does not intend to.

Audit outcome

Compliant

6. GATHERING RAW METER DATA

6.1. Electricity conveyed & notification by embedded generators (Clause 10.13, Clause 10.24 and 15.13)

Code reference

Clause 10.13, Clause 10.24 and Clause 15.13

Code related audit information

A participant must use the quantity of electricity measured by a metering installation as the raw meter data for the quantity of electricity conveyed through the point of connection.

This does not apply if data is estimated or gifted in the case of embedded generation under clause 15.13.

A trader must, for each electrically connected ICP that is not also an NSP, and for which it is recorded in the registry as being responsible, ensure that:

- *there is one or more metering installations*
- *all electricity conveyed is quantified in accordance with the Code*
- *it does not use subtraction to determine submission information for the purposes of Part 15.*

An embedded generator must give notification to the reconciliation manager for an embedded generating station, if the intention is that the embedded generator will not be receiving payment from the clearing manager or any other person through the point of connection to which the notification relates.

Audit observation

The list file was examined to confirm that all ICPs either had metering or were confirmed to be unmetered sites.

Processes for distributed generation were reviewed. A registry list as at 8/01/20 was examined to confirm whether emhTrade had supplied any ICPs with generation.

Any ICPs which had their meters bridged during the audit period were identified.

Audit commentary

Metering installations installed

20 new connections were processed during the audit period. emhTrade ensured that metering was installed prior to electrical connection.

All active ICPs have an MEP, and at least one meter channel. No submission information is determined using subtraction.

Distributed Generation

Changes to distributed generation details are identified through the monthly review of registry data changes described in **section 2.1**. If changes are detected, emhTrade checks the Admin Panel to determine whether compliant metering is installed or in the process of being installed. If a change to metering has not been requested, emhTrade contacts the customer to confirm whether they intend to generate electricity and send electricity into the network and arranges for appropriate metering to be installed.

Analysis of the registry list found that emhTrade supplies 20 ICPs with generation recorded by the distributor, all of which have import/export metering installed. Submission data was checked verified that injection consumption was correctly reported with flow direction I for all ICPs.

Bridged meters

emhTrade identified one bridged meter example that had occurred during the audit period. The meter was bridged on 19/12/18 and unbridged on 13/03/19. Consumption was not quantified by the meter during this period. This is discussed further in **section 8.1**

Disconnected ICPs are only switched in where the status indicates that they were disconnected remotely, making successful remote reconnection more likely. emhTrade rarely disconnects ICPs. Two ICPs were disconnected during the audit period, and both have since been decommissioned.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 6.1 With: Clause 10.13 From: 19-Dec-18 To: 13-Mar-19	A meter was bridged, energy was not metered and quantified according to the code for ICP 0492008787LCD8F. Potential impact: Low Actual impact: Low Audit history: None Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
Low	The controls are rated as strong as emhTrade will only bridge a meter as a last resort and they have good visibility of their customer base, so this is managed closely. The audit risk rating is low as only one ICP was affected during the audit period.		
Actions taken to resolve the issue		Completion date	Remedial action status
Resolved after faulty meter replaced once repairs of Asbestos completed.		Closed	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
emhTrade believes we acted on the safety and well being of the customer, having identified asbestos on site we engaged with all parties to resolve as soon as practical.		Closed	

6.2. Responsibility for metering at GIP (Clause 10.26 (6), (7) and (8))

Code reference

Clause 10.26 (6), (7) and (8)

Code related audit information

For each proposed metering installation or change to a metering installation that is a connection to the grid, the participant, must:

- *provide to the grid owner a copy of the metering installation design (before ordering the equipment)*
- *provide at least three months for the grid owner to review and comment on the design*
- *respond within three business days of receipt to any request from the grid owner for additional details or changes to the design*
- *ensure any reasonable changes from the grid owner are carried out.*

The participant responsible for the metering installation must:

- *advise the reconciliation manager of the certification expiry date not later than 10 business days after certification of the metering installation*
- *become the MEP or contract with a person to be the MEP*
- *advise the reconciliation manager of the MEP identifier no later than 20 days after entering into a contract or assuming responsibility to be the MEP.*

Audit observation

The NSP table was reviewed to confirm whether emhTrade is responsible for any GIPs.

Audit commentary

Review of the NSP table confirmed that emhTrade are not responsible for any GIPs.

Audit outcome

Not applicable

6.3. Certification of control devices (Clause 33 Schedule 10.7 and clause 2(2) Schedule 15.3)

Code reference

Clause 33 Schedule 10.7 and clause 2(2) Schedule 15.3

Code related audit information

The reconciliation participant must advise the metering equipment provider if a control device is used to control load or switch meter registers.

The reconciliation participant must ensure the control device is certified prior to using it for reconciliation purposes.

Audit observation

The registry list for 17/11/18 to 8/01/20 was reviewed, to identify any ICPs with profiles that require certification of the control device.

Audit commentary

Examination of the list file found that emhTrade has only used the HHE, HEM, and HHR profiles, and control devices are not used for reconciliation purposes.

Audit outcome

Compliant

6.4. Reporting of defective metering installations (Clause 10.43(2) and (3))

Code reference

Clause 10.43(2) and (3)

Code related audit information

If a participant becomes aware of an event or circumstance that lead it to believe a metering installation could be inaccurate, defective, or not fit for purpose they must:

- *advise the MEP*
- *include in the advice all relevant details.*

Audit observation

Processes relating to defective metering were examined.

emhTrade provided seven examples of defective meters. These were reviewed to determine whether the MEP was advised and if appropriate action was taken.

Audit commentary

Defective meters are typically identified through the meter reading validation process, or from information provided by the MEP or customer. Upon identifying a possible defective meter, emhTrade raises a field services job to investigate.

I reviewed seven examples of potential defective meters, which were identified through emhTrade's validation processes. Six defects related to communications issues and one meter was bridged. The MEP was notified in all instances.

Audit outcome

Compliant

6.5. Collection of information by certified reconciliation participant (Clause 2 Schedule 15.2)

Code reference

Clause 2 Schedule 15.2

Code related audit information

Only a certified reconciliation participant may collect raw meter data, unless only the MEP can interrogate the meter, or the MEP has an arrangement which prevents the reconciliation participant from electronically interrogating the meter:

2(2) - The reconciliation participant must collect raw meter data used to determine volume information from the services interface or the metering installation or from the MEP.

2(3) - The reconciliation participant must ensure the interrogation cycle is such that it does not exceed the maximum interrogation cycle in the registry.

2(4) - The reconciliation participant must interrogate the meter at least once every maximum interrogation cycle.

2(5) - When electronically interrogating the meter the participant must:

- a) ensure the system is to within +/- 5 seconds of NZST or NZDST*

- b) *compare the meter time to the system time*
- c) *determine the time error of the metering installation*
- d) *if the error is less than the maximum permitted error, correct the meter's clock*
- e) *if the time error is greater than the maximum permitted error then:*
 - i) *correct the metering installation's clock*
 - ii) *compare the metering installation's time with the system time*
 - iii) *correct any affected raw meter data.*
- f) *download the event log.*

2(6) – *The interrogation systems must record:*

- *the time*
- *the date*
- *the extent of any change made to the meter clock.*

Audit observation

HHR data is provided by AMS and FCLM as MEPs. Interrogation requirements and clock synchronisation were reviewed as part of their MEP audits.

Audit commentary

Fulfilment of the interrogation systems requirements was examined as part of the MEP audits, and found to be compliant. Only the MEPs can interrogate the meters where emhTrade is the trader.

Clock synchronisation event information is emailed to emhTrade by MEPs. No recent examples of HHR clock synchronisation events requiring action had been received by emhTrade.

Audit outcome

Compliant

6.6. Derivation of meter readings (Clause 3(1), 3(2) and 5 Schedule 15.2)

Code reference

Clause 3(1), 3(2) and 5 Schedule 15.2

Code related audit information

All meter readings must in accordance with the participants certified processes and procedures and using its certified facilities be sourced directly from raw meter data and, if appropriate, be derived and calculated from financial records.

All validated meter readings must be derived from meter readings.

A meter reading provided by a consumer may be used as a validated meter reading only if another set of validated meter readings not provided by the consumer are used during the validation process.

During the manual interrogation of each NHH metering installation the reconciliation participant must:

- a) *obtain the meter register*
- b) *ensure seals are present and intact*
- c) *check for phase failure (if supported by the meter)*
- d) *check for signs of tampering and damage*
- e) *check for electrically unsafe situations*

if the relevant parts of the metering installation are visible and it is safe to do so.

Audit observation

The data collection process was examined.

Under their HEM profile, emhTrade is allowed to temporarily supply NHH non-AMI meters until they are upgraded to HHR or AMI meters. emhTrade submits the volumes as HHR using their approved HEM profile. Volumes are calculated from the switch event reading and meter removal reading from the NHH meter. emhTrade no longer switches ICPs with NHH meters so this is not expected to occur going forward.

The registry list for 17/11/18 to 8/01/20 was examined and identified ICP 0007156273WA2E8 was temporarily supplied with a NHH meter and the HEM profile. This was checked.

emhTrade does not currently supply any ICPs with NHH non-AMI metering.

Audit commentary

ICP 0007156273WA2E8 was assigned the HEM profile from the switch in date 4/02/19 until the meter was upgraded to HHR on 18/03/19. The period was for 42 days. This exceeds the profile's criteria and is recorded as non-compliance in the emhTrade profile audit. The switch gain read and meter removal read were used to calculate consumption for the HEM profile period.

No customer or photo readings were received or used.

Audit outcome

Compliant

6.7. NHH meter reading application (Clause 6 Schedule 15.2)

Code reference

Clause 6 Schedule 15.2

Code related audit information

For NHH switch event meter reads, for the gaining trader the reading applies from 0000 hours on the day of the relevant event date and for the losing trader at 2400 hours at the end of the day before the relevant event date.

In all other cases, All NHH readings apply from 0000hrs on the day after the last meter interrogation up to and including 2400hrs on the day of the meter interrogation.

Audit observation

emhTrade has not submitted any NHH volumes. Using the HEM profile, emhTrade used to temporarily supply NHH non-AMI meters as HHR until they were upgraded to HHR or AMI meters. None of the affected ICPs switched out before the upgrade could be completed. emhTrade no longer switch in any sites with NHH metering installed so this is unlikely to occur in the future.

AMI meters with metering category 1 or 2 are switched as NHH:

- switch event meter readings in CS files were reviewed in **sections 4.3 and 4.10**, and
- switch event meter readings in RR files were reviewed in **section 4.4**.

Audit commentary

Reads applied in switching files were found to be compliant.

Audit outcome

Compliant

6.8. Interrogate meters once (Clause 7(1) and (2) Schedule 15.2)

Code reference

Clause 7(1) and (2) Schedule 15.2

Code related audit information

Each reconciliation participant must ensure that a validated meter reading is obtained in respect of every meter register for every non half hour metered ICP for which the participant is responsible, at least once during the period of supply to the ICP by the reconciliation participant, and used to create volume information.

This may be a validated meter reading at the time the ICP is switched to, or from, the reconciliation participant.

If exceptional circumstances prevent a reconciliation participant from obtaining the validated meter reading, the reconciliation participant is not required to comply with clause 7(1).

Audit observation

The registry list for 17/11/18 to 8/01/20 was examined and identified one ICP which was temporarily supplied with a NHH meter and the HEM profile until it was upgraded to an AMI meter.

Audit commentary

The ICP which had a NHH non AMI metering had at least one read during the period of supply.

Audit outcome

Compliant

6.9. NHH meters interrogated annually (Clause 8(1) and (2) Schedule 15.2)

Code reference

Clause 8(1) and (2) Schedule 15.2

Code related audit information

At least once every 12 months, each reconciliation participant must obtain a validated meter reading for every meter register for non half hour metered ICPs, at which the reconciliation participant trades continuously for each 12-month period.

If exceptional circumstances prevent a reconciliation participant from obtaining the validated meter reading, the reconciliation participant is not required to comply with clause 8(1).

Audit observation

The registry list for 17/11/18 to 8/01/20 was examined and identified ICP 0007156273WA2E8 which was temporarily supplied with a NHH meter and the HEM profile until it was upgraded to an AMI meter. This was checked.

Audit commentary

Review of the registry list confirmed that the NHH non-AMI meter was replaced within 42 days of switch in. Meter reading frequency reporting to the Electricity Authority was not required during the audit period.

Audit outcome

Compliant

6.10. NHH meters 90% read rate (Clause 9(1) and (2) Schedule 15.2)

Code reference

Clause 9(1) and (2) Schedule 15.2

Code related audit information

In relation to each NSP, each reconciliation participant must ensure that for each NHH ICP at which the reconciliation participant trades continuously for each 4 months, for which consumption information is required to be reported into the reconciliation process. A validated meter reading is obtained at least once every four months for 90% of the non half hour metered ICPs.

A report is to be sent to the Authority providing the percentage, in relation to each NSP, for which consumption information has been collected no later than 20 business days after the end of each month.

If exceptional circumstances prevent a reconciliation participant from obtaining the validated meter reading, the reconciliation participant is not required to comply with clause 9(1).

Audit observation

The registry list for 17/11/18 to 8/01/20 was examined and identified ICP 0007156273WA2E8 which was temporarily supplied with a NHH meter and the HEM profile until it was upgraded to an AMI meter. This was checked.

Audit commentary

Review of the registry list confirmed that the NHH non-AMI meter was replaced within 42 days of switch in. Meter reading frequency reporting to the Electricity Authority was not required during the audit period.

Audit outcome

Compliant

6.11. NHH meter interrogation log (Clause 10 Schedule 15.2)

Code reference

Clause 10 Schedule 15.2

Code related audit information

The following information must be logged as the result of each interrogation of the NHH metering:

10(a) - the means to establish the identity of the individual meter reader

10(b) - the ICP identifier of the ICP, and the meter and register identification

10(c) - the method being used for the interrogation and the device ID of equipment being used for interrogation of the meter.

10(d) - the date and time of the meter interrogation.

Audit observation

Using the HEM profile, emhTrade used to temporarily supply NHH non-AMI meters as HHR until they were upgraded to HHR or AMI meters. emhTrade submitted the volumes as HHR using their approved HEM profile, based on the switch event reading and meter removal reading from the NHH meter.

Audit commentary

emhTrade does not receive readings from NHH meter interrogation logs.

All validated NHH reads received were from incoming CS files, and meter exchange paperwork. Customer photo reads are not used, as discussed in **section 6.6**.

Audit outcome

Compliant

6.12. HHR data collection (Clause 11(1) Schedule 15.2)

Code reference

Clause 11(1) Schedule 15.2

Code related audit information

Raw meter data from all electronically interrogated metering installations must be obtained via the services access interface.

This may be carried out by a portable device or remotely.

Audit observation

HHR data is provided by AMS and FCLM as MEPs.

Audit commentary

MEPs are responsible for HHR data collection, and this is reviewed as part of their audits.

Audit outcome

Compliant

6.13. HHR interrogation data requirement (Clause 11(2) Schedule 15.2)

Code reference

Clause 11(2) Schedule 15.2

Code related audit information

The following information is collected during each interrogation:

11(2)(a) - the unique identifier of the data storage device

11(2)(b) - the time from the data storage device at the commencement of the download unless the time is within specification and the interrogation log automatically records the time of interrogation

11(2)(c) - the metering information, which represents the quantity of electricity conveyed at the point of connection, including the date and time stamp or index marker for each half hour period. This may be limited to the metering information accumulated since the last interrogation

11(2)(d) - the event log, which may be limited to the events information accumulated since the last interrogation

11(2)(e) - an interrogation log generated by the interrogation software to record details of all interrogations.

The interrogation log must be examined by the reconciliation participant responsible for collecting the data and appropriate action must be taken if problems are apparent or an automated software function flags exceptions.

Audit observation

HHR data is provided by AMS and FCLM as MEPS.

Audit commentary

MEPS are responsible for meeting the meter interrogation data requirements, and this is reviewed as part of their audits.

Audit outcome

Compliant

6.14. HHR interrogation log requirements (Clause 11(3) Schedule 15.2)

Code reference

Clause 11(3) Schedule 15.2

Code related audit information

The interrogation log forms part of the interrogation audit trail and, as a minimum, must contain the following information:

11(3)(a)- the date of interrogation

11(3)(b)- the time of commencement of interrogation

11(3)(c)- the operator identification (if available)

11(3)(d)- the unique identifier of the meter or data storage device

11(3)(e)- the clock errors outside the range specified in Table 1 of clause 2

11(3)(f)- the method of interrogation

11(3)(g)- the identifier of the reading device used for interrogation (if applicable).

Audit observation

HHR data is provided by AMS and FCLM as MEPS.

Audit commentary

MEPS are responsible for meeting the meter interrogation log requirements, and this is reviewed as part of their audits.

Audit outcome

Compliant

7. STORING RAW METER DATA

7.1. Trading period duration (Clause 13 Schedule 15.2)

Code reference

Clause 13 Schedule 15.2

Code related audit information

The trading period duration, normally 30 minutes, must be within $\pm 0.1\%$ (± 2 seconds).

Audit observation

HHR data is provided by AMS and FCLM as MEPs. Compliance was assessed as part of their MEP audits.

Audit commentary

MEPs are responsible for trading period duration, and compliance is recorded in their audit reports.

Audit outcome

Compliant

7.2. Archiving and storage of raw meter data (Clause 18 Schedule 15.2)

Code reference

Clause 18 Schedule 15.2

Code related audit information

A reconciliation participant who is responsible for interrogating a metering installation must archive all raw meter data and any changes to the raw meter data for at least 48 months, in accordance with clause 8(6) of Schedule 10.6.

Procedures must be in place to ensure that raw meter data cannot be accessed by unauthorised personnel.

Meter readings cannot be modified without an audit trail being created.

Audit observation

Raw meter data is retained by MEPs, and compliance is assessed as part of their MEP audits.

Processes to archive and store raw meter data were reviewed.

Audit commentary

emhTrade intends to retain meter reading data for over 48 months. I viewed the earliest meter readings recorded in emhTrade's data repository, which matched the switch in date for their earliest customer (24/11/2014).

I traced a sample of data for three HHR ICPs from the source files to system and the HHR aggregates files. All volumes matched, confirming that the reads had not been modified.

Review of audit trails confirmed that reads cannot be modified without an audit trail being created. Access to modify readings is restricted through log on privileges.

Audit outcome

Compliant

7.3. Non metering information collected / archived (Clause 21(5) Schedule 15.2)

Code reference

Clause 21(5) Schedule 15.2

Code related audit information

All relevant non-metering information, such as external control equipment operation logs, used in the determination of profile data must be collected, and archived in accordance with clause 18.

Audit observation

Processes to record non-metering information were discussed.

Audit commentary

No non metering information is collected by emhTrade.

Audit outcome

Compliant

8. CREATING AND MANAGING (INCLUDING VALIDATING, ESTIMATING, STORING, CORRECTING AND ARCHIVING) VOLUME INFORMATION

8.1. Correction of NHH meter readings (Clause 19(1) Schedule 15.2)

Code reference

Clause 19(1) Schedule 15.2

Code related audit information

If a reconciliation participant detects errors while validating non-half hour meter readings, the reconciliation participant must:

19(1)(a) - confirm the original meter reading by carrying out another meter reading

19(1)(b) – replace the original meter reading the second meter reading (even if the second meter reading is at a different date)

19(1A) if a reconciliation participant detects errors while validating non half hour meter readings, but the reconciliation participant cannot confirm the original meter reading or replace it with a meter reading from another interrogation, the reconciliation participant must:

- substitute the original meter reading with an estimated reading that is marked as an estimate; and*
- subsequently replace the estimated reading in accordance with clause 4(2)*

Audit observation

emhTrade has not submitted any NHH volumes. Using the HEM profile, emhTrade used to temporarily supply NHH non-AMI meters as HHR until they were upgraded to HHR or AMI meters.

Audit commentary

All ICPs have submission type HHR and this clause does not apply.

Audit outcome

Compliant

8.2. Correction of HHR metering information (Clause 19(2) Schedule 15.2)

Code reference

Clause 19(2) Schedule 15.2

Code related audit information

If a reconciliation participant detects errors while validating half hour meter readings, the reconciliation participant must correct the meter readings as follows:

19(2)(a) - if the relevant metering installation has a check meter or data storage device, substitute the original meter reading with data from the check meter or data storage device; or

19(2)(b) - if the relevant metering installation does not have a check meter or data storage device, substitute the original meter reading with data from another period provided:

- (i) The total of all substituted intervals matches the total consumption recorded on a meter, if available; and*
- (ii) The reconciliation participant considers the pattern of consumption to be materially similar to the period in error.*

Audit observation

Processes for correction of HHR meter readings were reviewed, including review of system and process documentation.

Audit commentary

Errors are identified through the data validation process, missing reads process, or information provided by the customer or MEP.

Where errors are detected, replacement data is estimated in accordance with the code. The estimation process is discussed in **section 9.4**.

emhTrade's reconciliation reporting processes always use the most recent data available for the half hour period, along with any switch, read change, or meter change readings. If volumes have been estimated and actual data later becomes available, the data is automatically replaced in the data repository and an audit trail is created. The original data is also retained in the data repository tables. I stepped through this process in the system and viewed system documentation.

I reviewed six examples of potential defective meters and one meter that had been bridged. These were identified through emhTrade's validation processes. The six defects related to communications issues. The actual data was provided for two ICPs, therefore no correction was required. The remaining four ICPs and the bridged meter required correction. All were checked and were appropriately corrected.

Audit outcome

Compliant

8.3. Error and loss compensation arrangements (Clause 19(3) Schedule 15.2)

Code reference

Clause 19(3) Schedule 15.2

Code related audit information

A reconciliation participant may use error compensation and loss compensation as part of the process of determining accurate data. Whichever methodology is used, the reconciliation participant must document the compensation process and comply with audit trail requirements set out in the Code.

Audit observation

The registry list with history for 17/11/18 to 8/01/20 was reviewed.

Audit commentary

emhTrade has only supplied three ICPs with metering category 3 or above. No ICPs have required loss compensation.

Audit outcome

Compliant

8.4. Correction of HHR and NHH raw meter data (Clause 19(4) and (5) Schedule 15.2)

Code reference

Clause 19(4) and (5) Schedule 15.2

Code related audit information

In correcting a meter reading in accordance with clause 19, the raw meter data must not be overwritten. If the raw meter data and the meter readings are the same, an automatic secure backup of the affected data must be made and archived by the processing or data correction application.

If data is corrected or altered, a journal must be generated and archived with the raw meter data file. The journal must contain the following:

19(5)(a)- the date of the correction or alteration

19(5)(b)- the time of the correction or alteration

19(5)(c)- the operator identifier for the person within the reconciliation participant who made the correction or alteration

19(5)(d)- the half-hour metering data or the non half hour metering data corrected or altered, and the total difference in volume of such corrected or altered data

19(5)(e)- the technique used to arrive at the corrected data

19(5)(f)- the reason for the correction or alteration.

Audit observation

Corrections are discussed in **section 8.2**, which confirmed that raw meter data is not overwritten as part of the correction process. Audit trails are discussed in **section 2.4**.

Raw meter data is collected by AMS, FCLM, and Metrix; data retention was reviewed as part of their MEP audits.

Audit commentary

Raw meter data is held by MEPs. emhTrade only corrects working data and they keep an audit trail. These audit trails were viewed during the audit and are discussed further in **section 2.4**.

The method of correction is system based as discussed in **section 8.2**, and retention of raw metering data is discussed in **section 7.2**.

Audit outcome

Compliant

9. ESTIMATING AND VALIDATING VOLUME INFORMATION

9.1. Identification of readings (Clause 3(3) Schedule 15.2)

Code reference

Clause 3(3) Schedule 15.2

Code related audit information

All estimated readings and permanent estimates must be clearly identified as an estimate at source and in any exchange of metering data or volume information between participants.

Audit observation

Provision of estimated reads to other participants during switching was reviewed in **sections 4.3, 4.4, 4.5, 4.10 and 4.11.**

Correct identification of estimated reads, and review of the estimation process was completed in **sections 8.2 and 9.4.**

Audit commentary

Readings are clearly identified in emhTrade's systems.

Audit outcome

Compliant

9.2. Derivation of volume information (Clause 3(4) Schedule 15.2)

Code reference

Clause 3(4) Schedule 15.2

Code related audit information

Volume information must be directly derived, in accordance with Schedule 15.2, from:

3(4)(a) - validated meter readings

3(4)(b) - estimated readings

3(4)(c) - permanent estimates.

Audit observation

Processes for derivation of volumes were discussed and observed.

Audit commentary

All reads are received from the MEP, or via the switching process. emhTrade does not complete any manual readings or accept customer readings.

Where AMI HHR readings are received, volumes are sourced from the AMI metering information. Where an estimated or switch reading is used, the HHR volumes are derived from actual readings or estimates.

Audit outcome

Compliant

9.3. Meter data used to derive volume information (Clause 3(5) Schedule 15.2)

Code reference

Clause 3(5) Schedule 15.2

Code related audit information

All meter data that is used to derive volume information must not be rounded or truncated from the stored data from the metering installation.

Audit observation

A sample of submission data was reviewed in **sections 11** and **12**, to confirm that volume was based on readings as required.

HHR data is collected by AMS, FCLM, and Metrix as MEPs. Compliance was assessed as part of their MEP audits.

Audit commentary

The MEP retains raw, unrounded data. Meter reading data is not rounded or truncated on import.

Audit outcome

Compliant

9.4. Half hour estimates (Clause 15 Schedule 15.2)

Code reference

Clause 15 Schedule 15.2

Code related audit information

If a reconciliation participant is unable to interrogate an electronically interrogated metering installation before the deadline for providing submission information, the submission to the reconciliation manager must be the reconciliation participant's best estimate of the quantity of electricity that was purchased or sold in each trading period during any applicable consumption period for that metering installation.

The reconciliation participant must use reasonable endeavours to ensure that estimated submission information is within the percentage specified by the Authority.

Audit observation

The HHR estimate process was examined, and a sample of four estimates were reviewed.

Audit commentary

Estimates are typically required where there is missing data, or an event reading is not provided on the registry for a meter change. It is not mandatory for MEPs to provide event readings for meter changes on the registry.

emhTrade uses the same data estimation process for correction and estimation. A script automatically creates the estimates. The process is sound and ensures that estimates are as accurate as possible by backfilling data based on the values available or using profiles, if insufficient actual data is available. A sample of six estimates were checked including ICP 0007156273WA2E8 with the HEM profile and ICP 0492008787LCD8F with the bridged meter. This confirmed that the documented process is being used to create estimates. emhTrade used reasonable endeavours to ensure that submitted information was within the percentage specified by the Authority in all cases.

emhTrade's reconciliation reporting processes always use the most recent data available for the half hour period, along with any switch, read change, or meter change readings. If volumes have been estimated and actual data later becomes available, the data is automatically replaced in the data repository and an audit trail created. The original data is also retained in the data repository tables. I stepped through this process in the system and viewed system documentation.

Audit outcome

Compliant

9.5. NHH metering information data validation (Clause 16 Schedule 15.2)

Code reference

Clause 16 Schedule 15.2

Code related audit information

Each validity check of non half hour meter readings and estimated readings must include the following:

16(2)(a) - confirmation that the meter reading or estimated reading relates to the correct ICP, meter, and register

16(2)(b) - checks for invalid dates and times

16(2)(c) - confirmation that the meter reading or estimated reading lies within an acceptable range compared with the expected pattern, previous pattern, or trend

16(2)(d) - confirmation that there is no obvious corruption of the data, including unexpected 0 values.

Audit observation

emhTrade has not submitted any NHH volumes. Using the HEM profile, emhTrade used to temporarily supply NHH non-AMI meters as HHR until they were upgraded to HHR or AMI meters.

Audit commentary

All NHH ICPs have HHR consumption calculated during the NHH period. This consumption is subject to the HHR validation process described in **section 9.6**.

Audit outcome

Compliant

9.6. Electronic meter readings and estimated readings (Clause 17 Schedule 15.2)

Code reference

Clause 17 Schedule 15.2

Code related audit information

Each validity check of electronically interrogated meter readings and estimate readings must be at a frequency that will allow a further interrogation of the data storage device before the data is overwritten within the data storage device and before this data can be used for any purpose under the Code.

Each validity check of a meter reading obtained by electronic interrogation or an estimated reading must include:

17(4)(a) - checks for missing data

17(4)(b) - checks for invalid dates and times

17(4)(c) - checks of unexpected 0 values

17(4)(d) - comparison with expected or previous flow patterns

17(4)(e) - comparisons of meter readings with data on any data storage device registers that are available

17(4)(f) - a review of meter and data storage device event list. Any event that could have affected the integrity of metering data must be investigated.

Audit observation

I reviewed the HHR data validation process, including meter event logs, the reconciliation validation and estimate procedure, and system parameters for validations.

Audit commentary

Electronic meter reading information is provided by MEPs. Meters are interrogated regularly, and there is little risk that data can be overwritten. Data is held for a longer period at the meter and can be re-interrogated later if required.

emhTrade's system conducts validity checks on files prior to uploading, these checks are for file format and number of intervals. Once the data is uploaded, estimation occurs for any missing values as discussed in **section 9.4**. All data is then validated further, regardless of whether it is estimated or actual data. This validation includes checks for:

- missing data,
- unexpected zeros,
- negative values,
- differences to previous or expected flow patterns,
- midnight reads that are not monotonic increasing, and
- inconsistency between the difference between the midnight reads and the sum of the day's trading periods.

Billing validation exceptions are also reviewed on the Admin Panel as described in **section 2.1**. The billing validations include checks for:

- negative consumption,
- estimates that were more or less than actual consumption data for the period, and
- ICPs with missing actual data.

If any issues are identified, an exception is created. The exception will be investigated and either approved, or a system estimate will be created.

emhTrade receives meter event reports from AMS and FCLM. The files are reviewed on the first business day of each month to identify any events which could affect meter accuracy and require investigation or action. I reviewed a sample of meter event reports provided by AMS and FCLM and found that events had been investigated and field services jobs raised as required.

Audit outcome

Compliant

10. PROVISION OF METERING INFORMATION TO THE PRICING MANAGER IN ACCORDANCE WITH SUBPART 4 OF PART 13 (CLAUSE 15.38(1)(F))

10.1. Generators to provide HHR metering information (Clause 13.136)

Code reference

Clause 13.136

Code related audit information

The generator (and/or embedded generator) must provide to the grid owner connected to the local network in which the embedded generator is located, half hour metering information in accordance with clause 13.138 in relation to generating plant that is subject to a dispatch instruction:

- *that injects electricity directly into a local network; or*
- *if the meter configuration is such that the electricity flows into a local network without first passing through a grid injection point or grid exit point metering installation.*

Audit observation

The NSP table on the registry was reviewed.

Audit commentary

emhTrade is not responsible for any NSPs. No information is provided to the pricing manager in accordance with this clause.

Audit outcome

Not applicable

10.2. Unoffered & intermittent generation provision of metering information (Clause 13.137)

Code reference

Clause 13.137

Code related audit information

Each generator must provide the relevant grid owner half-hour metering information for:

- *any unoffered generation from a generating station with a point of connection to the grid 13.137(1)(a)*
- *any electricity supplied from an intermittent generating station with a point of connection to the grid 13.137(1)(b).*

The generator must provide the relevant grid owner with the half-hour metering information required under this clause in accordance with the requirements of Part 15 for the collection of that generator's volume information (clause 13.137(2)).

If such half-hour metering information is not available, the generator must provide the pricing manager and the relevant grid owner a reasonable estimate of such data (clause 13.137(3)).

Audit observation

The NSP table on the registry was reviewed.

Audit commentary

emhTrade is not responsible for any NSPs. No information is provided to the pricing manager in accordance with this clause.

Audit outcome

Not applicable

10.3. Loss adjustment of HHR metering information (Clause 13.138)

Code reference

Clause 13.138

Code related audit information

The generator must provide the information required by clauses 13.136 and 13.137,

13.138(1)(a) - adjusted for losses (if any) relative to the grid injection point or, for embedded generators the grid exit point, at which it offered the electricity

13.138(1)(b) - in the manner and form that the pricing manager stipulates

13.138(1)(c) - by 0500 hours on a trading day for each trading period of the previous trading day.

The generator must provide the half-hour metering information required under this clause in accordance with the requirements of Part 15 for the collection of the generator's volume information.

Audit observation

The NSP table on the registry was reviewed.

Audit commentary

emhTrade is not responsible for any NSPs. No information is provided to the pricing manager in accordance with this clause.

Audit outcome

Not applicable

10.4. Notification of the provision of HHR metering information (Clause 13.140)

Code reference

Clause 13.140

Code related audit information

If the generator provides half-hourly metering information to a grid owner under clauses 13.136 to 13.138, or 13.138A, it must also, by 0500 hours of that day, advise the relevant grid owner.

Audit observation

The NSP table on the registry was reviewed.

Audit commentary

emhTrade is not responsible for any NSPs. No information is provided to the pricing manager in accordance with this clause.

Audit outcome

Not applicable

11. PROVISION OF SUBMISSION INFORMATION FOR RECONCILIATION

11.1. Buying and selling notifications (Clause 15.3)

Code reference

Clause 15.3

Code related audit information

Unless an embedded generator has given a notification in respect of the point of connection under clause 15.3, a trader must give notice to the reconciliation manager if it is to commence or cease trading electricity at a point of connection using a profile with a profile code other than HHR, RPS, UML, EG1, or PV1 at least five business days before commencing or ceasing trader.

The notification must comply with any procedures or requirements specified by the reconciliation manager.

Audit observation

Processes to create buying and selling notifications were reviewed.

A registry list for 17/11/18 to 8/01/20 was reviewed confirm the profiles used.

Audit commentary

emhTrade has used the HHR, HHE and HEM profiles during the audit period. All ICPs are now HHR profiled and the HEM profile is no longer expected to be used.

I identified one instance where emhTrade began trading on the HEM profile at NSP CBG011 during the audit period. A trading notification was created, but the profile could not be entered because there is no facility to enter profiles into the trader notifications created on the reconciliation manager portal. This is recorded as a technical non-compliance below.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 11.1 With: Clause 15.3 From: 04-Feb-19 To: 18-Mar-19	No trading notification was provided for HEM profile for CBG011. Potential impact: None Actual impact: None Audit history: None Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
Low	There is no impact and the this is not expected to be needed in the future as all ICPs are HHR profiled. The reconciliation manager's system recorded the profile correctly, and the notification process does not allow the trader to enter the profile.		
Actions taken to resolve the issue		Completion date	Remedial action status
emhTrade believes the profile is recorded correctly on the RM system. No further action is required.		NA	Cleared
Preventative actions taken to ensure no further issues will occur		Completion date	
No further action to be taken as we are no longer using the HEM trade profile.		NA	

11.2. Calculation of ICP days (Clause 15.6)

Code reference

Clause 15.6

Code related audit information

Each retailer and direct purchaser (excluding direct consumers) must deliver a report to the reconciliation manager detailing the number of ICP days for each NSP for each submission file of submission information in respect of:

15.6(1)(a) - submission information for the immediately preceding consumption period, by 1600 hours on the 4th business day of each reconciliation period

15.6(1)(b) - revised submission information provided in accordance with clause 15.4(2), by 1600 hours on the 13th business day of each reconciliation period.

The ICP days information must be calculated using the data contained in the retailer or direct purchaser's reconciliation system when it aggregates volume information for ICPs into submission information.

Audit observation

The process for the calculation of ICP days was examined by checking ten NSPs with a small number of ICPs on the August 2018 submission to confirm the AV110 ICP days calculation was correct.

Review of the registry list for 17/11/18 to 8/01/20 confirmed that there have been no changes of submission type between HHR and NHH.

I reviewed variances for 12 months of GR100 reports. All variances were reviewed to determine the cause.

Audit commentary

The process for the calculation of ICP days was examined by checking ten NSPs a small number of ICPs on the August 2019 ICP days submission. The ICP days calculation was confirmed to be correct for the sample checked.

The GR100 differences for the past 12 months are set out below.

ICP Days difference between the registry and emhTrade

Negative percentage figures indicate that the emhTrade's ICP days figures are higher than those contained on the registry.

Month	Ri	R1	R3	R7	R14
Sep-18	-1.05%	-1.00%	-1.00%	-1.00%	-1.00%
Oct-18	-1.01%	-1.01%	-1.01%	-1.01%	-1.01%
Nov-18	-0.31%	-0.37%	0.00%	0.00%	-
Dec-18	-1.37%	0.35%	0.00%	-1.58%	-
Jan-19	0.34%	0.00%	0.34%	-1.73%	-
Feb-19	0.01%	0.00%	-0.22%	-1.58%	-
Mar-19	0.00%	0.33%	0.00%	-1.34%	-
Apr-19	0.00%	0.00%	-1.32%	-1.32%	-
May-19	0.00%	0.00%	-1.31%	-1.31%	-
Jun-19	-0.26%	-0.26%	-0.26%	-	-
Jul-19	0.00%	-0.02%	-0.17%	-	-
Aug-19	-0.46%	-0.46%	-0.46%	-	-

I reviewed all ICP days variances for revision 1 and above and found they had occurred for the following reasons:

- NSP changes not being identified in six instances. emhTrade intend to check the GR090 (ICPs missing files) as an additional check to identify such discrepancies going forward. These are expected to be corrected for the next revision.
- Timing differences due to backdated switches.
- The GR100 file is incorrectly reporting ICP days for ICPs that have since switched out or are no longer included such as this with an installation type of “G” only. I checked the AV110 and the balancing areas in question were not submitted by emhTrade but the GR100 has incorrectly recorded emhTrade as having submitted ICP days. For example, ICP days were submitted for balancing area TUI1101EASTG in September 2018 and October 2018 revision 1 but these were not submitted for revision 3 onwards however the GR100 indicates that emhTrade submitted 30 ICP days from revisions 3 to revision 14 for both months. This is causing ICP days discrepancies to be overstated.

The ICP days issues raised in the last audit were not evident in this audit and therefore the fixes deployed have corrected these.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 11.2 With: Clause 15.6 From: 01-Sept-18 To: 08-Jan-20	Inaccurate ICP days were reported for a small number of ICPs. Corrected data will be washed up in the next available revision, and processes have been corrected. Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	Controls are currently rated as moderate but will be strengthened to strong with the adoption of checking the ICPs missing (GR090) report. The impact is assessed to be low, as updated data will be provided through the revision process prior by revision 14 in all instances.		
Actions taken to resolve the issue		Completion date	Remedial action status
Discrepancies were reviewed and corrected during internal reconciliation for the ICPs affected and new revisions of the report contains accurate information		June 2019	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
emhTrade included the GR-090 in their controls to avoid incorrect reporting		March 2020	

11.3. Electricity supplied information provision to the reconciliation manager (Clause 15.7)

Code reference

Clause 15.7

Code related audit information

A retailer must deliver to the reconciliation manager its total monthly quantity of electricity supplied for each NSP, aggregated by invoice month, for which it has provided submission information to the reconciliation manager, including revised submission information for that period as non- loss adjusted values in respect of:

15.7(a) - submission information for the immediately preceding consumption period, by 1600 hours on the 4th business day of each reconciliation period

15.7(b) - revised submission information provided in accordance with clause 15.4(2), by 1600 hours on the 13th business day of each reconciliation period.

Audit observation

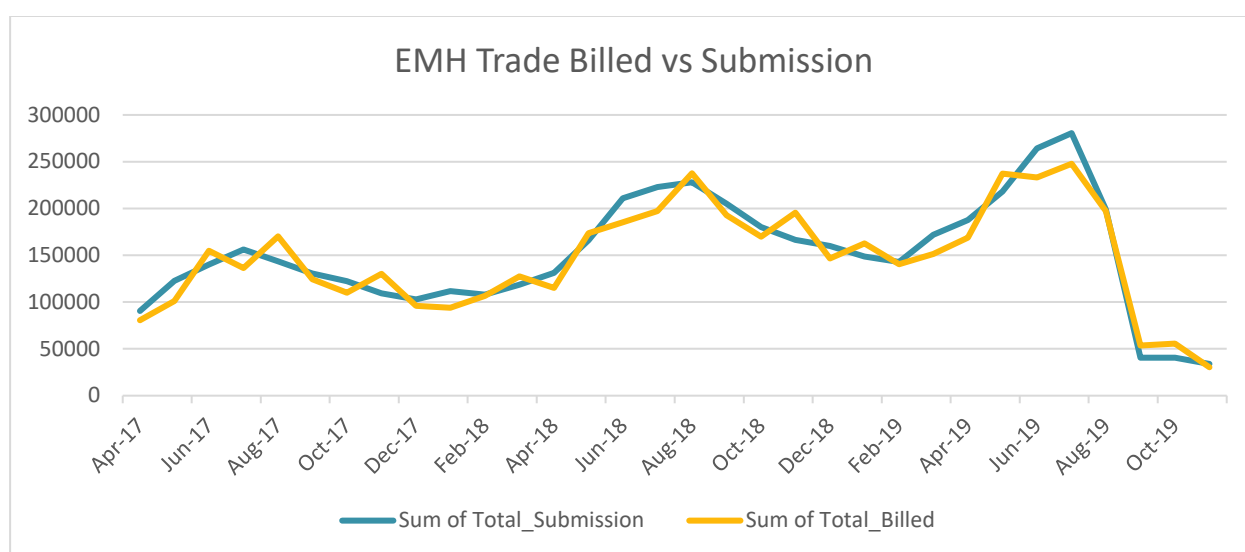
The process for the calculation of as billed volumes was examined by checking five NSPs to confirm the AV120 calculation was correct.

GR130 reports for April 2018 to November 2019 were reviewed to confirm whether the relationship between billed and submitted data appears reasonable.

Audit commentary

The process for the calculation of as billed volumes was examined by checking three NSPs against invoice information for September 2019. The AV120 billed consumption reported was found to be lower than the invoiced volume. emhTrade is investigating why the figures do not match.

I also checked the difference between submission and electricity supplied information for a 31-month period, and the results are shown in the chart below:



The total difference is -3.3% for the two years ended November 2019 and -3.5% for the year ended November 2019 (billed lower than submission). This is greater than the expected +/- 0.5% variance and was raised as a recommendation to be investigated in the last audit. I checked a further four NSPs for November 2019 and found the same issue as the identified for September 2018, which is that the reported billed volume was less than the invoiced volume. This issue may not have been visible in the last audit due to the larger customer base, but as this has now reduced the issue has come to light. The actual invoiced volumes closely matched the submitted volumes suggesting that emhTrade are submitting the correct volumes and the variance between billed vs submitted is overstated.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 11.3 With: Clause 15.7 From: 17-Nov-18 To: 8-Jan-20	Incorrect billed volumes reported in the AV130. Potential impact: Low Actual impact: Low Audit history: None Controls: Weak Breach risk rating: 3		
Audit risk rating	Rationale for audit risk rating		
Low	Controls are rated as weak as the billed vs submitted volumes have been incorrect for some time, but this has not been identified via the existing controls in place. The audit risk rating is low, as the actual billed vs submitted figures for the NSPs checked indicate that billed vs submitted is likely to be within +/- 0.5% threshold.		
Actions taken to resolve the issue		Completion date	Remedial action status
emhTrade is investigating our system to verify what caused the low volume reporting of AV120. The outcome of this will determine the resolution.		March 2020	Investigating
Preventative actions taken to ensure no further issues will occur		Completion date	
emhTrade will include a validity check prior to submitting the AV120 to the Reconciliation Manager.		March 2020	

11.4. HHR aggregates information provision to the reconciliation manager (Clause 15.8)

Code reference

Clause 15.8

Code related audit information

A retailer or direct purchaser (excluding direct consumers) must deliver to the reconciliation manager its total monthly quantity of electricity supplied for each half hourly metered ICP for which it has provided submission information to the reconciliation manager, including:

15.8(a) - submission information for the immediately preceding consumption period, by 1600 hours on the 4th business day of each reconciliation period

15.8(b) - revised submission information provided in accordance with clause 15.4(2), by 1600 hours on the 13th business day of each reconciliation period.

Audit observation

I confirmed that the process for the calculation and aggregation of HHR data is correct, by matching HHR aggregates information with the HHR volumes data 12 submissions.

The GR090 ICP Missing files were examined for September 2017 to October 2018. All differences were reviewed.

Alleged breaches during the audit period were reviewed to determine whether any reconciliation submissions were late.

Audit commentary

emhTrade's HHR aggregates report contains submission information, not electricity supplied information as specified under clause 15.8. Although the reports emhTrade produces are consistent with the Reconciliation Manager Functional Specification, this is recorded as non-compliance below.

I checked the process for aggregation of HHR data was correct, by matching HHR aggregates information to the volumes for 14 submissions. Compliance was confirmed.

The GR090 ICP Missing files were examined for all revisions for September 2018 to August 2019. This found an increase in differences. These were examined and found the differences related to 13 ICPs for the following reasons:

- Six were due to NSP changes not being processed and therefore volume is being reconciled to the incorrect NSP. These will be corrected in the next revision. emhTrade intend to use the ICP missing report to further assist in identifying such discrepancies going forward.
- Six were due to the GR090 incorrectly recording the ICP as having been submitted when not expected in the registry but a check of the AV090 confirmed that the ICP was not included in the revisions. This appears to be a similar issue to that affecting the ICP days reporting as detailed in **section 11.2**. This affected the following ICPs in the following revisions:

ICP	Revisions reported as missing but not submitted
0002977731LCCFB	December 18 R3,7&8
0027592575LCC84	December 18 R3
0252176332LC263	September 18 R7&14 October 18 R7 & 14 November 18 R7 December 18 R3&7 January 19 R3 & 7
0432377697LC80A	December 18 R1,3,7&8
1001151312LC197	December 18 R1,3, 7&8
9501100029WAF11	December 18 R1,3&7
9501100030WABED	November 18 R7 December 18 R3&7 January R3&7

- One (ICP 9501100023WAD80) was due to the incorrect meter number resulting in the volumes for this meter being associated with the incorrect ICP and therefore the incorrect NSP. The MEP had corrected this by revision 3. emhTrade then corrected it in their system. emhTrade is compliant as the error was caused by incorrect information on the registry as per clause 11.32.

I also reviewed emhTrade's volumes and aggregates for May and November 2019 for reasonableness and did not find any evidence of under submission of volumes for these months.

As described in **section 1.6**, a breach was recorded for late submission for the February 2019 initial allocation. The breach allegation was closed early. This was the second occurrence of this breach. emhTrade now complete their submissions by day three to prevent this and there have been no further breaches.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 11.4 With: Clause 15.8 From: entire audit period	Alleged breach 1811EMHL1 was recorded for late provision of February 2019 initial submission information. HHR aggregates file does not contain electricity supplied information. Potential impact: Low Actual impact: Low Audit history: Three Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
Low	Controls are rated as strong as the controls in place are robust to prevent any further late submissions. The issue relating to content of the aggregates file is an error in the code, emhTrade is providing submission information as expected. The audit risk rating is low as this is unlikely to occur in the future.		
Actions taken to resolve the issue		Completion date	Remedial action status
Data was submitted late following a notification by the RM of which our breach was resolved early.		February 2019	Cleared
Preventative actions taken to ensure no further issues will occur		Completion date	
emhTrade was aware of this and had already put remedies in place since our completion date.		February 2019	

12. SUBMISSION COMPUTATION

12.1. Daylight saving adjustment (Clause 15.36)

Code reference

Clause 15.36

Code related audit information

The reconciliation participant must provide submission information to the reconciliation manager that is adjusted for NZDT using one of the techniques set out in clause 15.36(3) specified by the Authority.

Audit observation

HHR data is provided by MEPs. Compliance was assessed as part of their MEP audits.

Daylight savings processes in emhTrade's system were observed.

Audit commentary

Daylight savings processes for the MEPs were reviewed as part of their audits and found to be compliant.

The "trading period run on" technique is used for daylight saving adjustment. This was confirmed by checking data recorded in the emhTrade's system during daylight savings and standard time. The correct number of trading periods were recorded.

Audit outcome

Compliant

12.2. Creation of submission information (Clause 15.4)

Code reference

Clause 15.4

Code related audit information

By 1600 hours on the 4th business day of each reconciliation period, the reconciliation participant must deliver submission information to the reconciliation manager for all NSPs for which the reconciliation participant is recorded in the registry as having traded electricity during the consumption period immediately before that reconciliation period (in accordance with Schedule 15.3).

By 1600 hours on the 13th business day of each reconciliation period, the reconciliation participant must deliver submission information to the reconciliation manager for all points of connection for which the reconciliation participant is recorded in the registry as having traded electricity during any consumption period being reconciled in accordance with clauses 15.27 and 15.28, and in respect of which it has obtained revised submission information (in accordance with Schedule 15.3).

Audit observation

A sample of HHR ICPs were checked to ensure that volumes were correctly recorded in **section 11.4**. Correction are discussed in **section 8.2**.

emhTrade has not submitted any NHH volumes. Using the HEM profile, emhTrade used to temporarily supply NHH non-AMI meters as HHR until they were upgraded to HHR or AMI meters. emhTrade no longer accept ICPs with NHH metering.

Alleged breaches during the audit period were reviewed to determine whether any reconciliation submissions were late.

Audit commentary

I checked the accuracy of the HHR aggregates and HHR volumes files in **section 11.4** and confirm compliance.

NHH meters have HHR volumes calculated based on the switch event reading and meter removal reading. The meter for ICP 0007156273WA2E8 was not changed until the following month after it switched in. I checked the volumes submitted for this ICP and confirmed that volumes were submitted correctly from revision 1 but no volume was submitted for the initial submission in February 2019 as the volumes weren't available at that time. This is recorded as non-compliance below and in **sections 12.9 & 13.1**.

As described in **section 1.6**, an alleged breach was recorded for late submission for the February 2019 initial allocation. The alleged breach was closed early. emhTrade now submits their reconciliation files by COB day three to avoid this occurring. There have been no further instances of this occurring.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 12.2 With: Clause 15.4 From: 01-Feb-19 To: 28-Feb-19	No volume was submitted in the Ri revision for one ICP for February 2019. Alleged breach 1811EMHL1 was recorded for late provision of February 2019 initial submission information. Potential impact: Low Actual impact: Low Audit history: Once Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
Low	Controls are rated as strong, because submissions are now submitted at the end of day 3 to prevent any further reoccurrences and NHH meters are not accepted any longer. The audit risk rating is low there have been no late submissions since, and ICPs with NHH meters are no longer accepted.		
Actions taken to resolve the issue		Completion date	Remedial action status
As per comments noted on Audit Ref: 11.4 With: Clause 15.8.		See 11.4	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
As per comments noted on Audit Ref: 11.4 With: Clause 15.8.		See 11.4	

12.3. Allocation of submission information (Clause 15.5)

Code reference

Clause 15.5

Code related audit information

In preparing and submitting submission information, the reconciliation participant must allocate volume information for each ICP to the NSP indicated by the data held in the registry for the relevant consumption period at the time the reconciliation participant assembles the submission information. Volume information must be derived in accordance with Schedule 15.2.

However, if, in relation to a point of connection at which the reconciliation participant trades electricity, a notification given by an embedded generator under clause 15.13 for an embedded generating station is in force, the reconciliation participant is not required to comply with the above in relation to electricity generated by the embedded generating station.

Audit observation

Processes to ensure that information used to aggregate the reconciliation reports is consistent with the registry were reviewed in **section 2.1**.

I walked through the HHR volumes and aggregates validation process, including reviewing historic validations.

Audit commentary

emhTrade has validation processes to ensure that aggregation factors and volumes reported are correct. These validation processes are discussed in **sections 2.1** and **9.6**. There were six ICPs where the NSP change was missed resulting in the volume being submitted to the incorrect NSP. This will be corrected in the next revision. emhTrade intend to use the ICP missing report in addition to their existing checks to identify such discrepancies. This is recorded as non-compliance below.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 12.3 With: Clause 15.5 From: 17-Nov-18 To: 8-Jan-20	Six ICPs recorded with the incorrect NSP. Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	Controls are rated as moderate, as the controls did not effectively capture NSP changes. This is expected to be strengthened to strong with the use of the ICP missing report. The audit risk rating is low, as this affected only a small number of ICPs, and this will be corrected in the next revision.		
Actions taken to resolve the issue		Completion date	Remedial action status
emhTrade had already identified the NSP changes during internal reconciliation however later than the first revisions being submitted. All NSPs identified during the audit were submitted correctly in later revisions.		June 2019	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
emhTrade included the GR-090 in their controls to avoid incorrect reporting		March 2020	

12.4. Grid owner volumes information (Clause 15.9)

Code reference

Clause 15.9

Code related audit information

The participant (if a grid owner) must deliver to the reconciliation manager for each point of connection for all of its GXPs, the following:

- *submission information for the immediately preceding consumption period, by 1600 hours on the 4th business day of each reconciliation period (clause 15.9(a))*
- *revised submission information provided in accordance with clause 15.4(2), by 1600 hours on the 13th business day of each reconciliation period (clause 15.9(b)).*

Audit observation

Review of the NSP table confirmed that emhTrade is not a grid owner.

Audit commentary

Review of the NSP table confirmed that emhTrade is not a grid owner and is not required to submit grid owner volume information.

Audit outcome

Not applicable

12.5. Provision of NSP submission information (Clause 15.10)

Code reference

Clause 15.10

Code related audit information

The participant (if a local or embedded network owner) must provide to the reconciliation manager for each NSP for which the participant has given a notification under clause 25(1) Schedule 11.1 (which relates to the creation, decommissioning, and transfer of NSPs) the following:

- *submission information for the immediately preceding consumption period, by 1600 hours on the 4th business day of each reconciliation period (clause 15.10(a))*
- *revised submission information provided in accordance with clause 15.4(2), by 1600 hours on the 13th business day of each reconciliation period (clause 15.10(b)).*

Audit observation

A registry list was reviewed to confirm emhTrade does not own any local or embedded networks. emhTrade act as the agent for the submission of NSP volume data for Waipa Networks Lakewood (LAKE) embedded network. They have sub-contracted this to John Candy Consulting, so they take no part in this process. A separate report of this is being undertaken for John Candy Consulting and Waipa Networks will submit that report in relation to the undertaking of these services, therefore emhTrade do not use any agents in relation to the functions they carry out.

Audit commentary

emhTrade does not provide NSP submission information.

Audit outcome

Not applicable

12.6. Grid connected generation (Clause 15.11)

Code reference

Clause 15.11

Code related audit information

The participant (if a grid connected generator) must deliver to the reconciliation manager for each of its points of connection, the following:

- *submission information for the immediately preceding consumption period, by 1600 hours on the 4th business day of each reconciliation period (clause 15.11(a))*
- *revised submission information provided in accordance with clause 15.4(2), by 1600 hours on the 13th business day of each reconciliation period (clause 15.11(b)).*

Audit observation

The registry list and NSP table were reviewed.

Audit commentary

emhTrade is not a grid connected generator, therefore compliance was not assessed.

Audit outcome

Not applicable

12.7. Accuracy of submission information (Clause 15.12)

Code reference

Clause 15.12

Code related audit information

If the reconciliation participant has submitted information and then subsequently obtained more accurate information, the participant must provide the most accurate information available to the reconciliation manager or participant, as the case may be, at the next available opportunity for submission (in accordance with clauses 15.20A, 15.27, and 15.28).

Audit observation

Alleged breaches during the audit period were reviewed to determine whether any revision submissions were late.

Corrections were reviewed in **sections 8.1** and **8.2**.

Audit commentary

Review of alleged breaches confirmed that no revision submissions were made late.

The following issues which impacted on the accuracy of volume information submitted to the reconciliation manager were identified.

- NSP changes not being processed for six ICPs and therefore volume is being reconciled to the incorrect NSP. These will be corrected in the next revision. emhTrade intend to use the ICP missing report to further assist in identifying such discrepancies going forward.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 12.7 With: Clause 15.12 From: 17-Nov-18 To: 8-Jan-20	Six ICPs recorded with the incorrect NSP. Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	Controls are rated as moderate, as the controls did not effectively capture NSP changes. This is expected to be strengthened to strong with the use of the ICP missing report. The audit risk rating is low, as this affected only a small number of ICPs, and this will be corrected in the next revision.		
Actions taken to resolve the issue		Completion date	Remedial action status
As per comments noted in section 12.3 of this Audit report with clause 15.5 of the Code		See 12.3	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
As per comments noted in section 12.3 of this Audit report with clause 15.5 of the Code		See 12.3	

12.8. Permanence of meter readings for reconciliation (Clause 4 Schedule 15.2)

Code reference

Clause 4 Schedule 15.2

Code related audit information

Only volume information created using validated meter readings, or if such values are unavailable, permanent estimates, has permanence within the reconciliation processes (unless subsequently found to be in error).

The relevant reconciliation participant must, at the earliest opportunity, and no later than the month 14 revision cycle, replace volume information created using estimated readings with volume information created using validated meter readings.

If, despite having used reasonable endeavours for at least 12 months, a reconciliation participant has been unable to obtain a validated meter reading, the reconciliation participant must replace volume information created using an estimated reading with volume information created using a permanent estimate in place of a validated meter reading.

Audit observation

emhTrade has not submitted any NHH volumes. Using the HEM profile, emhTrade temporarily supplied one NHH non-AMI meters as HHR until it was upgraded to an AMI meter.

Audit commentary

All ICPs were submitted as HHR, and this clause does not apply.

Audit outcome

Not applicable

12.9. Reconciliation participants to prepare information (Clause 2 Schedule 15.3)

Code reference

Clause 2 Schedule 15.3

Code related audit information

If a reconciliation participant prepares submission information for each NSP for the relevant consumption periods in accordance with the Code, such submission information for each ICP must comprise the following:

- *half hour volume information for the total metered quantity of electricity for each ICP notified in accordance with clause 11.7(2) for which there is a category 3 or higher metering installation (clause 2(1)(a)) for each ICP about which information is provided under clause 11.7(2) for which there is a category 1 or category 2 metering installation (clause 2(1)(b)):*
 - a) *any half hour volume information for the ICP; or*
 - b) *any non half hour volumes information calculated under clauses 4 to 6 (as applicable).*
 - c) *unmetered load quantities for each ICP that has unmetered load associated with it derived from the quantity recorded in the registry against the relevant ICP and the number of days in the period, the distributed unmetered load database, or other sources of relevant information. (clause 2(1)(c))*
- *to create non half hour submission information a reconciliation participant must only use information that is dependent on a control device if (clause 2(2)):*
 - a) *the certification of the control device is recorded in the registry; or*
 - b) *the metering installation in which the control device is location has interim certification.*
- *to create submission information for a point of connection the reconciliation participant must apply to the raw meter data (clause 2(3)):*
 - a) *for each ICP, the compensation factor that is recorded in the registry (clause 2(3)(a))*
 - b) *for each NSP the compensation factor that is recorded in the metering installations most recent certification report. (clause 2(3)(b)).*

Audit observation

Aggregation and content of reconciliation submissions was reviewed.

Audit commentary

Compliance with this clause was assessed:

- all emhTrade's ICPs have metering category 1, 2, or 4 and are submitted as HHR,
- no ICPs with unmetered load are supplied,
- no profiles requiring a certified control device are used,
- no loss or compensation arrangements are required, and
- aggregation of the AV090 and AV140 reports is compliant.

As detailed in **section 12.2**, the meter change for ICP 0007156273WA2E8 was not completed until the following month it switched in. I checked the volumes submitted for this ICP and confirmed that volumes were submitted correctly from revision 1 but no volume was submitted for the initial submission in February 2019 as the volumes weren't available at that time. This is recorded as non-compliance in **section 12.2, 13.1** and below.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 12.9 With: Clause 2 of schedule 15.3 From: 01-Feb-19 To: 28-Feb-19	No volume was submitted in the Ri revision for one ICP for February 2019. Potential impact: Low Actual impact: Low Audit history: None Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
Low	Controls are rated as strong and the risk as low, because ICPs with NHH meters are no longer accepted.		
Actions taken to resolve the issue		Completion date	Remedial action status
emhTrade believes that volumes were submitted in initial revision as estimates		February 2019	Disputed
Preventative actions taken to ensure no further issues will occur		Completion date	
emhTrade no longer use HEM profile and no longer trade NHH metering.		February 2019	

12.10. Historical estimates and forward estimates (Clause 3 Schedule 15.3)

Code reference

Clause 3 Schedule 15.3

Code related audit information

For each ICP that has a non-half hour metering installation, volume information derived from validated meter readings, estimated readings, or permanent estimates must be allocated to consumption periods using the following techniques to create historical estimates and forward estimates (clause 3(1)).

Each estimate that is a forward estimate or a historical estimate must clearly be identified as such (clause 3(2)).

If validated meter readings are not available for the purpose of clauses 4 and 5, permanent estimates may be used in place of validated meter readings (clause 3(3)).

Audit observation

emhTrade has not submitted any NHH volumes. Using the HEM profile, emhTrade temporarily supplied NHH non-AMI meters as HHR until they were upgraded to HHR or AMI meters.

Review of the registry list for 01/11/17 to 16/11/18 confirmed that all ICPs had submission type HHR.

Audit commentary

All ICPs were submitted as HHR, and this clause does not apply.

Audit outcome

Not applicable

12.11. Historical estimate process (Clause 4 and 5 Schedule 15.3)

Code reference

Clause 4 and 5 Schedule 15.3

Code related audit information

The methodology outlined in clause 4 of Schedule 15.3 must be used when preparing historic estimates of volume information for each ICP when the relevant seasonal adjustment shape is available.

If a seasonal adjustment shape is not available, the methodology for preparing an historical estimate of volume information for each ICP must be the same as in clause 4, except that the relevant quantities kWh_{Px} must be prorated as determined by the reconciliation participant using its own methodology or on a flat shape basis using the relevant number of days that are within the consumption period and within the period covered by kWh_{Px} .

Audit observation

emhTrade has not submitted any NHH volumes. Using the HEM profile, emhTrade temporarily supplied NHH non-AMI meters as HHR until they were upgraded to HHR or AMI meters.

Review of the registry list for 01/11/17 to 16/11/18 confirmed that all ICPs had submission type HHR.

Audit commentary

All ICPs were submitted as HHR, and this clause does not apply.

Audit outcome

Not applicable

12.12. Forward estimate process (Clause 6 Schedule 15.3)

Code reference

Clause 6 Schedule 15.3

Code related audit information

Forward estimates may be used only in respect of any period for which an historical estimate cannot be calculated.

The methodology used for calculating a forward estimate may be determined by the reconciliation participant, only if it ensures that the accuracy is within the percentage of error specified by the Authority.

Audit observation

emhTrade has not submitted any NHH volumes. Using the HEM profile, emhTrade temporarily supplied NHH non-AMI meters as HHR until they were upgraded to HHR or AMI meters.

Review of the registry list for 01/11/17 to 16/11/18 confirmed that all ICPs had submission type HHR.

Audit commentary

All ICPs were submitted as HHR, and this clause does not apply.

Audit outcome

Not applicable

12.13. Compulsory meter reading after profile change (Clause 7 Schedule 15.3)

Code reference

Clause 7 Schedule 15.3

Code related audit information

If the reconciliation participant changes the profile associated with a meter, it must, when determining the volume information for that meter and its respective ICP, use a validated meter reading or permanent estimate on the day on which the profile change is to take effect.

The reconciliation participant must use the volume information from that validated meter reading or permanent estimate in calculating the relevant historical estimates of each profile for that meter.

Audit observation

Review of the registry list and event detail report for 17/11/18 to 8/01/20 identified one ICP which had a profile change from HEM to HHR. This was checked.

Audit commentary

The profile change coincided with meter change, and actual readings were available as required by this clause.

Audit outcome

Compliant

13. SUBMISSION FORMAT AND TIMING

13.1. Provision of submission information to the RM (Clause 8 Schedule 15.3)

Code reference

Clause 8 Schedule 15.3

Code related audit information

For each category 3 of higher metering installation, a reconciliation participant must provide half hour submission information to the reconciliation manager.

For each category 1 or category 2 metering installation, a reconciliation participant must provide to the reconciliation manager:

- *Half hour submission information; or*
- *Non half hour submission information; or*
- *A combination of half hour submission information and non half hour submission information*

However, a reconciliation participant may instead use a profile if:

- *The reconciliation participant is using a profile approved in accordance with clause Schedule 15.5; and*
- *The approved profile allows the reconciliation participant to provide half hour submission information from a non half hour metering installation; and*
- *The reconciliation participant provides submission information that complies with the requirements set out in the approved profile.*

Half hour submission information provided to the reconciliation manager must be aggregated to the following levels:

- *NSP code*
- *reconciliation type*
- *profile*
- *loss category code*
- *flow direction*
- *dedicated NSP*
- *trading period*

The non half hour submission information that a reconciliation participant submits must be aggregated to the following levels:

- *NSP code*
- *reconciliation type*
- *profile*
- *loss category code*
- *flow direction*
- *dedicated NSP*
- *consumption period or day*

Audit observation

Processes to ensure that information used to aggregate the reconciliation reports is consistent with the registry were reviewed in **section 2.1**.

Aggregation of HHR volumes is discussed in **sections 12.3** and **11.4**.

Audit commentary

Submission information is provided to the reconciliation manager in the appropriate format and is aggregated to the following level:

- NSP code,
- reconciliation type,
- profile,
- loss category code,
- flow direction,
- dedicated NSP, and
- consumption period.

As detailed in **section 12.2**, the meter change for ICP 0007156273WA2E8 was not completed until the following month it switched in. I checked the volumes submitted for this ICP and confirmed that volumes were submitted correctly from revision 1 but no volume was submitted for the initial submission in February 2019 as the volumes weren't available at that time. This is recorded as non-compliance in **section 12.2, 12.9** and below.

Audit outcome

Non-compliant

Non-compliance		Description	
Audit Ref: 13.1 With: Clause 8 of schedule 15.3 From: 01-Feb-19 To: 28-Feb-19		No volume was submitted in the Ri revision for one ICP for February 2019. Potential impact: Low Actual impact: Low Audit history: None Controls: Strong Breach risk rating: 1	
Audit risk rating		Rationale for audit risk rating	
Low		Controls are rated as strong and the risk as low, because ICPs with NHH meters are no longer accepted.	
Actions taken to resolve the issue		Completion date	Remedial action status
As per comments noted in section 12.9.		February 2019	Disputed
Preventative actions taken to ensure no further issues will occur		Completion date	
As per comments noted in section 12.9.		February 2019	

13.2. Reporting resolution (Clause 9 Schedule 15.3)

Code reference

Clause 9 Schedule 15.3

Code related audit information

When reporting submission information, the number of decimal places must be rounded to not more than two decimal places.

If the unrounded digit to the right of the second decimal place is greater than or equal to five, the second digit is rounded up, and if the digit to the right of the second decimal place is less than five, the second digit is unchanged.

Audit observation

I reviewed the rounding of data on the AV090 and AV140 reports as part of the aggregation checks.

Audit commentary

Submission information is appropriately rounded to no more than two decimal places.

Audit outcome

Compliant

13.3. Historical estimate reporting to RM (Clause 10 Schedule 15.3)

Code reference

Clause 10 Schedule 15.3

Code related audit information

By 1600 hours on the 13th business day of each reconciliation period the reconciliation participant must report to the reconciliation manager the proportion of historical estimates per NSP contained within its non half hour submission information.

The proportion of submission information per NSP that is comprised of historical estimates must (unless exceptional circumstances exist) be:

- *at least 80% for revised data provided at the month 3 revision (clause 10(3)(a))*
- *at least 90% for revised data provided at the month 7 revision (clause 10(3)(b))*
- *100% for revised data provided at the month 14 revision (clause 10(3)(c)).*

Audit observation

emhTrade has not submitted any NHH volumes. Using the HEM profile, emhTrade temporarily supplied NHH non-AMI meters as HHR until they were upgraded to HHR or AMI meters.

Review of the registry list for 01/11/17 to 16/11/18 confirmed that all ICPs had submission type HHR.

Audit commentary

All ICPs were submitted as HHR, and this clause does not apply.

Audit outcome

Not applicable

CONCLUSION

emhTrade is a HHR only trader. They have changed their business model and now supply a much smaller customer base. They no longer accept NHH metered ICPs which previously could be switched in under the HEM profile until an AMI or HHR meter could be installed. Only one upgrade occurred during the audit period.

emhTrade has a high level of compliance but due to two minor events their non-compliance appears to have increased during the audit period:

- The one NHH metered ICP that switched in during the audit was not upgraded during the first month resulting in the submissions for this ICP to be missing from the February initial submission. This caused three of the non-compliances found in this audit.
- Two NSP changes were missed causing six ICPs to be reconciled to the incorrect NSP. This caused three of the non-compliances.

Overall emhTrade have robust processes in place and with a smaller customer base I don't expect these non-compliances to be present in the next audit. I note that nine of the non-compliances have control ratings of strong indicating these are one off-errors and controls are robust. Four of the non-compliances recorded in the last audit have been cleared.

This audit found 17 non-compliances and makes no recommendations. The date of the next audit is determined by the Electricity Authority and is dependent on the level of compliance during this audit. The table below provides some guidance on this matter and contains a future risk rating score of 26, which results in an indicative audit frequency of 12 months. I have considered this result in conjunction with emhTrade's responses agree with the recommendation.

PARTICIPANT RESPONSE

At emhTrade we take our compliance obligations seriously, as can be seen by the generally high level of compliance outlined in this report. Since our audit, and the publication of this report, we have reduced our ICP count from the ~60 that we had, to ~5 and will further reduce this to 1-3 in the coming days. Whilst we note the future audit frequency recommendation of 12 months, we'd like to highlight to the authority that audits incur cost to our business which is disproportionate to the number of ICPs that we serve and reconcile. We'd like to ask therefore that the Authority consider these extenuating circumstances (minimal ICPs) when setting our next audit date, and specifically request that this not be earlier than 36 months.