

ELECTRICITY INDUSTRY PARTICIPATION CODE
RECONCILIATION PARTICIPANT AUDIT REPORT

VERITEK

For

EMHTRADE LIMITED

Prepared by: Tara Gannon, Veritek Limited

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Audit report due date: 21 November 2017

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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 7.1.

The audit found six non-compliance issues, one recommendation is made, and one issue is raised.

The non-compliances found were minor. Very small numbers of ICPs were affected, and where late files were identified they were between one and two business days late. All incorrect data found was corrected promptly during the audit.

Several non-compliances identified in the 2016 audit have been cleared, including all previously raised issues with AN and CS file content. Non-compliance because the HHR aggregates file does not contain electricity supplied information still exists, because the code has not been changed.

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 10, which results in an indicative audit frequency of 18 months. I have considered this result in conjunction with emhTrade's responses and agree with the recommended audit period.

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	Three instances of incorrect data recorded on the registry.	Moderate	Low	2	Cleared. The data has been corrected, backdated to the switch in date.
ANZSIC Codes	3.6	9 (1)(k) of Schedule 11.1	ICP 0130384585LC16E had a T994 (don't know) ANZSIC code recorded. A backdated correction has now been processed.	Moderate	Low	2	Cleared. The data has been corrected, backdated to the switch in date.
CS files	4.3	5 Schedule 11.3	Two late standard CS files.	Strong	Low	1	Identified.
CS files	4.10	11 Schedule 11.3	One late switch move CS file.	Strong	Low	1	Identified.
Meter event reporting	9.6	17 Schedule 15.2	Meter event reports are not routinely reviewed.	Moderate	Low	2	Identified.
HHR aggregates	11.4	15.8	One ICP was missing from the HHR aggregates file for December 2016 revisions one, three and seven due to incorrect treatment of a meter change after the ICP switched out. HHR aggregates file does not contain electricity supplied information.	Moderate	Low	2	Identified.
Future Risk Rating						10	

RECOMMENDATIONS

Subject	Section	Description	Recommendation
Relevant information	2.1	Clause 10.6, 11.2, 15.2 Data consistency checks	Validate ANZSIC codes, and correct any codes beginning with T. Compare profile code and MEP, and update any incorrect codes.

ISSUES

Subject	Section	Description	Issue
Buying and selling notifications	11.1	Clause 15.3 Buying and selling notifications	Traders are unable to enter profile codes when creating buying and selling notifications on the electricity reconciliation portal, making it difficult to comply with the requirements of clause 15.3.

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



1.3. Persons involved in this audit

Auditor:

Tara Gannon

Veritek Limited

Electricity Authority Approved Auditor

emhTrade personnel assisting in this audit were:

Name	Title
Stuart Innes	Director
Matthew Harte	Director
Evelise Favari	Operations and Customer Support Representative

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 Metrix as MEPs. There are no agents involved in the process.

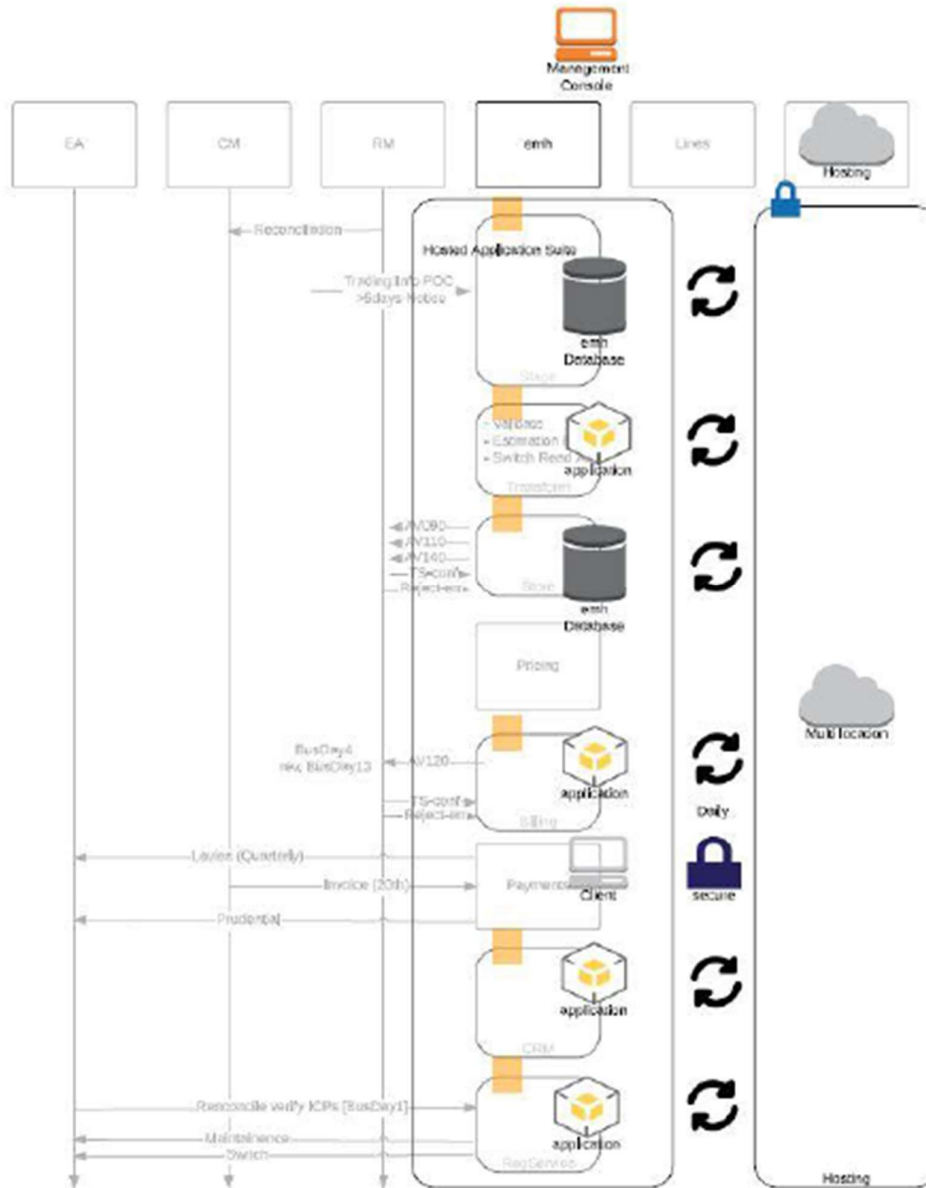
Audit commentary

Not applicable

1.5. Hardware and Software

The following diagram shows emhTrade's system configuration. 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

There are no breach allegations recorded by the Electricity Authority.

1.7. ICP Data

emhTrade provided a list file for each of their participant codes as at September 2017. The active ICPs from the list file are summarised by meter category in the table below:

Metering Category	(2017)	(2016)
1	184	126
2	-	-
3	-	-
4	-	-
5	-	-
9	-	-

emhTrade provided a list file for each of their participant codes as at September 2017 by status:

Status	Number of ICPs (2017)	Number of ICPs (2016)
Active (2,0)	184	126
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)	-	-

1.8. Authorisation Received

emhTrade provided all information required directly.

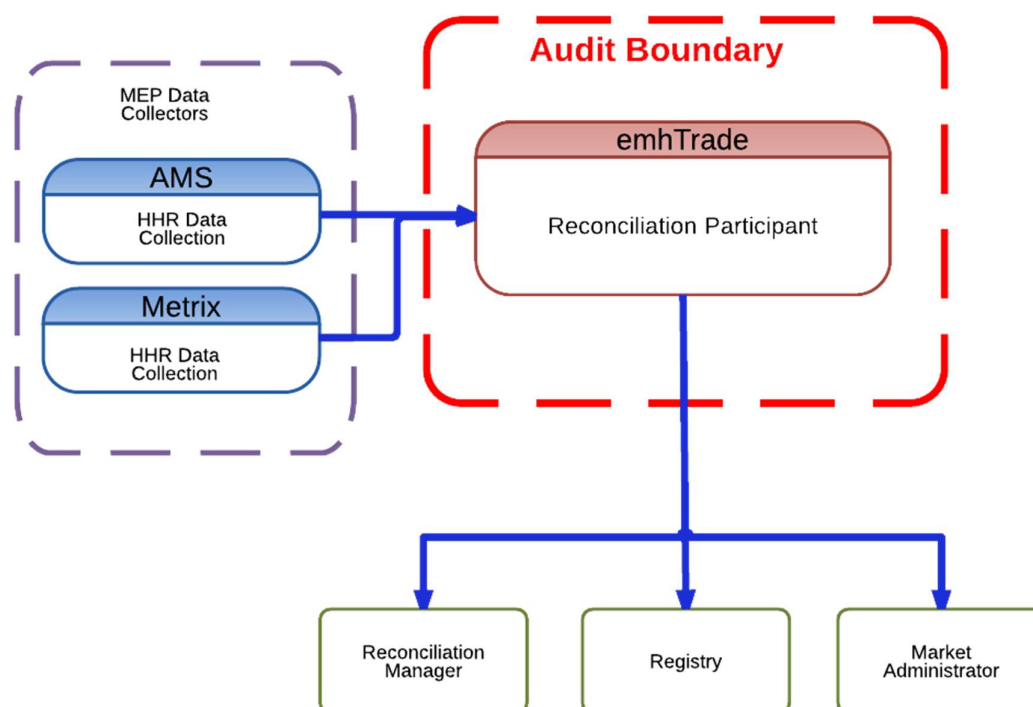
1.9. Scope of Audit

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 V7.1.

The audit was carried out at emhTrade’s premises in Auckland on 27th October 2017.

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 Metrix 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) Metrix - HHR (AMI)
(c)(iii) - Creation and management of volume information		AMS – HHR (AMI) Metrix - HHR (AMI)
(d) – Calculation of ICP days		

Tasks Requiring Certification Under Clause 15.38(1) of Part 15	Agents Involved in Performance of Tasks	MEPs Providing AMI data
(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 2016 by Steve Woods of Veritek Limited. The summary tables below show that three of the seven non-compliances identified still exist.

Further comment is made in the relevant sections of this report.

Table of non-compliance

Subject	Section	Clause	Non-compliance	Remedial Action
Switching	2.1.2	3 of schedule 11.3	4 AN files sent with the AA code, despite having AMI.	Cleared. Refer to section 4.2.
	2.1.4	5 of schedule 11.3	1 late CS file. 2 incorrect meter readings.	Still existing. Cleared. Refer to section 4.3.
	2.2.2	10 of schedule 11.3	1 late AN file. 9 AN files sent with the AA code, despite having AMI.	Cleared. Refer to section 4.8.
	2.2.3	11 of schedule 11.3	1 late CS file. 2 incorrect meter readings.	Still existing. Cleared. Refer to section 4.10.
ICP days	5.2	15.6 of part 15	ICP days submitted against the incorrect NSP for one ICP.	Cleared. Refer to section 11.2.

Subject	Section	Clause	Non-compliance	Remedial Action
HHR aggregates	5.4	15.8 of part 15	HHR aggregates file does not contain electricity supplied information.	Still existing. Refer to section 11.4.
Submission information	6.2.3	8 of schedule 15.3	One ICP submitted against the incorrect NSP.	Cleared. Refer to section 13.1.

Table of recommendations

Subject	Section	Clause	Recommendation for improvement	Remedial Action
Registry validation	2.7.8	11 of schedule 11.1.	Ensure registry validation process accounts for historic changes to data.	Cleared. Refer to section 2.1.

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 was examined to identify any registry discrepancies, and confirm that all information was correct and not misleading.

Audit commentary

emhTrade conducts a validation of their data against historic registry on business day one of each month.

The 2016 audit found that NSP changes were not always detected by the validation, because the comparison looked for any record that matched, even if the record was historic. The process has been modified to compare date ranged data, and I saw evidence that NSP changes are detected.

The registry list was reviewed and found three ICPs with incorrect data. This is recorded as non-compliance below. In all three cases, the data recorded by emhTrade matched the registry, but was incorrect. I recommend implementing an additional check for data consistency to ensure that incorrect data is promptly identified in the future.

Issue	2017 Qty	Comments
Blank ANZSIC codes	0	Compliant.
ANZSIC "T999" not stated	0	Compliant.
ANZSIC "T994" don't know	1	ICP 0130384585LC16E had a T994 ANZSIC code, a correction backdated to the switch in date has been processed. Refer to section 3.6 "ANZSIC Codes" .
ANZSIC "T998 "response outside of scope"	0	Compliant.
UML load = zero	0	Compliant, no unmetered load identified.
Incorrect UML load	0	Compliant, no unmetered load identified.

Issue	2017 Qty	Comments
No MEP recorded or nominated and UML= "N"	0	Compliant.
Shared unmetered load incorrect	0	Compliant, no unmetered load identified.
ICPs with Distributor unmetered load populated but retail unmetered load is blank and UML flag = N	0	Compliant, no unmetered load identified.
Incorrect profile	2	ICPs 0000234016UNAB0 and 0241787076LCED4 had profile HHE and NGCM meters. These ICPs were switched manually in the registry, and the profile was not updated to HHR due to human error. Corrections backdated to the switch in date have been processed for both ICPs.
Active date variance with Initial Energisation Date	0	No new connections have been processed.
Active ICP with no MEP	0	Compliant.
Active Category 9 and UML "N"	0	Compliant.

Non-compliance	Description
<p>Audit Ref: 2.1</p> <p>With: Clause 10.6, 11.2, 15.2</p> <p>From: entire audit period</p>	<p>Three instances of incorrect data recorded on the registry.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: None</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>
Audit risk rating	Rationale for audit risk rating
Low	<p>Controls are rated as moderate as they are sufficient to mitigate risk most of the time. There is room for errors to occur where the systems match but both are incorrect.</p> <p>The audit risk rating is low, because a very small number of issues were identified, and all have been corrected.</p>

Actions taken to resolve the issue	Completion date	Remedial action status
0130384585LC16E ANZSIC code Changed via the Registry	01/11/2017	Cleared
0000234016UNAB0 Profile changed via the Registry	01/11/2017	
0241787076LCED4 Profile changed via the Registry	01/11/2017	
implemented and will reflect in all subsequent reconciliations.		
Preventative actions taken to ensure no further issues will occur	Completion date	
Validation of ANZSIC code included in EMHT onboarding procedure.	01/11/2017	
Profile code exceptions to be reported systematically to Administrative Portal for regular checking.	01/12/2017	

Description	Recommendation	Audited party comment	Remedial action
Clause 10.6, 11.2, 15.2 Data consistency checks	Validate ANZSIC codes, and correct any codes beginning with T. Compare profile code and MEP, and update any incorrect codes.	Validation of ANZSIC code included in EMHT onboarding procedure. Profile code exceptions to be reported systematically to Administrative Portal for regular checking.	Identified

Audit outcome

Non-compliant

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 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

I reviewed the method to receive meter reading information.

I traced volumes for one month for ten HHR ICPs from the source data to emhTrade's data repository and the HHR aggregates submissions.

Audit commentary

Read and volume data is received from AMS and Metrix via SFTP. Hourly, emhTrade mirrors AMS and Metrix's SFTP sites and imports the files into their data repository.

I traced volumes for one month for five AMS HHR ICPs and five Metrix HHR ICPs from the source data to emhTrade's data repository and the HHR aggregates submissions. All reads and volumes matched the source data.

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

The audit trail requirements are documented in the Quality Manual and include the activity identifier, date, time, and an operator identifier.

Audit outcome

Compliant

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 registry list with history for 01/11/2016 - 25/09/2017 was reviewed.

Audit commentary

emhTrade has only supplied ICPs with metering category 1, and has not completed any new connections. 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 registry list with history and event detail reports for 01/11/2016 - 25/09/2017 were reviewed to identify all new connections.

Audit commentary

emhTrade has not completed any new connections, and does not intend to. Compliance was not assessed.

Audit outcome

Not applicable

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:

- *they are recorded in the registry as being responsible for the ICP; and*
- *one or more certified metering installations are in place at the ICP in accordance with Part 10; and*
- *for an ICP that has not previously been electrically connected, the network owner has given written approval.*

Audit observation

The registry list with history and event detail reports for 01/11/2016 - 25/09/2017 were reviewed to identify all new connections.

Audit commentary

emhTrade has not completed any new connections, and does not intend to. No ICPs have been temporarily electrically connected by emhTrade, and compliance was not assessed.

Audit outcome

Not applicable

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:

- *they are recorded in the registry as being responsible for the ICP; and*

- *one or more certified metering installations are in place at the ICP in accordance with Part 10; and*
- *for an ICP that has not previously been electrically connected, the network owner has given written approval.*

Audit observation

The registry list with history and event detail reports for 01/11/2016 - 25/09/2017 were reviewed to identify all new connections and reconnections.

Audit commentary

emhTrade has not completed any new connections, and does not intend to.

ICP 0491861699LC3FF was reconnected on switching in; the meter had a final certification, and emhTrade was recorded as the trader for the ICP.

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

All of emhTrade's ICPs are connected to the Vector network. emhTrade demonstrated that a Use of Systems agreement is in place.

When a customer 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:

- Network = Vector
- MEP = Metrix or AMS
- Half hour metering = yes
- AMI flag = yes.

Applications that do not meet these criteria are declined.

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. The process to validate and approve customer applications was observed.

Audit commentary

emhTrade demonstrated that arrangements are in place with AMS and Metrix.

As discussed in **section 2.12**, emhTrade's customer application validation and approval process will only accept ICPs where the MEP is AMS or Metrix.

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 registry list with history and event detail reports for 01/11/2016 - 25/09/2017 were reviewed to identify all new connections.

Audit commentary

emhTrade has not completed any new connections, and does not intend to. Compliance was not assessed.

Audit outcome

Not applicable

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 registry list with history and event detail reports for 01/11/2016 - 25/09/2017 were reviewed to identify all new connections.

Audit commentary

emhTrade has not completed any new connections, and does not intend to. Compliance was not assessed.

Audit outcome

Not applicable

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 01/11/2016 - 25/09/2017 was analysed determine the overall performance for that period. All changes to status were reviewed.

Audit commentary

The registry interfaces process documentation contains a section regarding changes to registry information. This section stipulates the appropriate timeframes.

One status update occurred during the period. ICP 0491861699LC3FF was reconnected on switching in; the registry was updated within two business days.

Audit outcome

Compliant

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

The registry list and event detail reports for the period from 01/11/2016 to 25/09/2017 were reviewed to:

- identify all new connections during the period
- identify all decommissions during the period
- identify all MEP nominations during the period; and
- confirm whether all active, metered ICPs have an MEP recorded.

Audit commentary

No new connections or decommissions were completed, and no MEP nominations were made.

Review of the registry list confirmed that all active ICPs have an MEP recorded. emhTrade do not supply any ICPs with unmetered load.

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 registry list with history and event detail reports for 01/11/2016 - 25/09/2017 were reviewed to identify all new connections.

Audit commentary

emhTrade has not completed any new connections, and does not intend to. Compliance was not assessed.

Audit outcome

Not applicable

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. A registry list snapshot report as at 25/09/2017 was reviewed to check ANZSIC codes.

Audit commentary

The registry list report was analysed and found ICP 0130384585LC16E had a T994 (don't know) ANZSIC code recorded. This is recorded as non-compliance below. A correction effective from the switch in date (02/08/2015) was processed on 01/11/2017.

emhTrade does not process new connections, and has historically relied on the ANZSIC codes recorded in the registry by the previous retailer. emhTrade intends to implement processes to validate ANZSIC codes to prevent recurrence of this non-compliance.

Non-compliance	Description
Audit Ref: 3.6 With: Clause 9 (1)(k) of Schedule 11.1 From: entire audit period	ICP 0130384585LC16E had a T994 (don't know) ANZSIC code recorded. A backdated correction has now been processed. Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2

Audit risk rating	Rationale for audit risk rating		
Low	<p>Controls are rated as moderate as they were sufficient to reduce the risk of incorrect ANZSIC codes most of the time; only one of emhTrade's 184 ICPs had an incorrect code, and it was inherited from the previous retailer.</p> <p>The audit risk rating is low, emhTrade has corrected the ANZSIC code and intends to implement procedures to prevent recurrence of this non-compliance.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
0130384585LC16E ANZSIC code Changed via the EA Registry		01/11/2017	Cleared
Preventative actions taken to ensure no further issues will occur		Completion date	
Validation of ANZSIC code included in EMHT onboarding procedures.		01/11/2017	

Audit outcome

Non-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 with history for 01/11/2016 - 25/09/2017 was reviewed to identify all 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, 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

The reconnection process was examined. The event detail report for 01/11/2016 to 25/09/2017 was analysed. The findings in relation to the timeliness of updates to registry is recorded in **section 3.3**.

Audit commentary

One status update to active occurred during the period. ICP 0491861699LC3FF was reconnected on switching in. Electricity is quantified by a metering installation.

emhTrade’s system only allows one active customer per ICP.

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 disconnection process was discussed. The event detail report for 01/11/2016 to 25/09/2017 was analysed to identify all disconnections during the period.

Audit commentary

emhTrade intends to conduct disconnections remotely and will only update the registry once confirmation of the disconnection is provided by the MEP.

emhTrade did not disconnect any ICPs during the audit period; compliance was not assessed.

Audit outcome

Not applicable

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

The registry list with history and event detail reports for 01/11/2016 - 25/09/2017 were reviewed to identify all new connections.

Audit commentary

emhTrade has not completed any new connections, and does not intend to. Compliance was not assessed.

Audit outcome

Not applicable

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 sample of five ICPs using the typical sampling methodology were checked to confirm that they were notified to the registry within two business days.

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. NT files were sent within two days of all conditions being met for the ICPs checked.

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 must disregard every event date established by the losing trader for a customer who has been with the losing trader for less than two calendar months (clause 4(2) of Schedule 11.3).

Audit observation

An event detail report for 01/11/2016 to 25/09/2017 was reviewed to:

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

The switch breach report was examined for the audit period.

AN codes were checked for a sample of two ANs per response code applied.

Audit commentary

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

The 2016 audit found some AN files had the AA (accept and acknowledge) code applied, when they should have had AD (advanced metering). This issue has been cleared, I found that all 11 transfer ANs had AD applied correctly.

All 11 transfer ANs had proposed switch event dates within five business days after the NT was received.

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 01/11/2016 to 25/09/2017 was reviewed, to identify CS files issued by emhTrade.

The accuracy of the content of transfer 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
- accuracy of average daily consumption (this is based on the most recent read to read consumption).

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

Audit commentary

Eight transfer switches were completed during the audit period. The switch breach report recorded two late CS files for transfer switches, they were one and two days late respectively. This is recorded as a non-compliance below. emhTrade relies on the registry switch breach report, but manually corrects the due dates to meet the timeframes specified in the code. For the late files, the switch breach report date was applied due to human error, instead of the adjusted date.

The non-compliance raised in the 2016 audit for recording the midnight read on the day of the switch was resolved in August 2016. The accuracy of the content of CS files was confirmed by checking a sample of five transfer CS files. The data contained in the files was found to be accurate.

Non-compliance	Description		
Audit Ref: 4.3 With: Clause 5 Schedule 11.3 From: two CS files	Two late CS files. Potential impact: Low Actual impact: Low Audit history: Once previously Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
Low	Controls are sufficient to reduce the risk of late files most of the time. The impact is low because only two files were affected, and they were delivered one and two days late respectively.		
Actions taken to resolve the issue		Completion date	Remedial action status
EMHT Daily Check procedures explain the differences between the aged Switch breach reported via the registry and the Code. They have been reviewed and understood.		1/11/2017	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Daily process for checking the Switch Breach Report and adjusting dates to the Coded definition for those checks have been implemented. Additional training has been given to operational personnel.		1/11/2017	

Audit outcome

Non-compliant

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 four calendar months of the actual event date, provide to the losing trader a changed switch event meter reading supported by two 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 requests was examined.

The event detail report for the period from 01/11/2016 to 25/09/2017 was reviewed to identify all read change requests and acknowledgements. All read changes were checked.

The switch breach history report for the audit period was reviewed, to identify late read change and acknowledgement files.

Audit commentary

emhTrade issued three read change requests for two ICPs which had transfer switches.

- The first read change request for 0000112883UN8AC was validly rejected by the losing trader; emhTrade had provided estimate readings in the request.
- The other two requests were accepted. One of these was sent within four business days, the other within 16 business days. The requested reads were more than ± 200 kWh different to the CS read.

In all cases, emhTrade had the correct readings recorded in their systems and the content of the files was correct.

The switch breach report did not record any late read change or acknowledgement 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 01/11/2016 to 25/09/2017 was reviewed to identify all read change requests and acknowledgements where clause 6(2) and (3) of schedule 11.3 applied.

Audit commentary

emhTrade issued three read change requests for two transfer ICPs. One of the requests for 0000112883UN8AC met the requirements of clause 6(2) and (3) of schedule 11.3, and was validly accepted by the losing trader. The correct reads are recorded in emhTrade's system.

No read change requests were issued to emhTrade.

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 sample of five ICPs using the typical sampling methodology were checked to confirm that they were notified to the registry within two business days.

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. NT files were sent within two days of all conditions being met for the ICPs checked.

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—
 - o is not earlier than the gaining trader’s proposed event date, and
 - o 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 01/11/2016 to 25/09/2017 was reviewed to:

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

The switch breach report was examined for the audit period.

AN codes were checked for all move in ANs provided.

Audit commentary

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

The 2016 audit found some AN files had the AA (accept and acknowledge) code applied, when they should have had AD (advanced metering). This issue has been cleared, I found that all move in ANs had AD applied correctly.

All move in ANs had proposed switch event dates within five business days after the NT was received.

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

The setting of event dates for move switches was examined. The event detail report for 01/11/2016 to 25/09/2017 was examined, comparing the NT requested event date with the AN event date sent by emhTrade.

The report was also checked for any event dates that were set greater than ten days from the NT receipt date in **section 4.8**.

Audit commentary

For all 15 move in switches completed during the audit period the AN proposed switch date and CS event date matched the date requested by the gaining retailer.

All event dates were found to be within 10 business days of the NT receipt date in **section 4.8**.

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 01/11/2016 to 25/09/2017 was reviewed, to identify CS files issued by emhTrade.

The accuracy of the content of transfer 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
- accuracy of average daily consumption (this is based on the most recent read to read consumption).

The process to manage the sending of the CS file within five business days of the NT receipt date was examined. The switch breach history report for the audit period was reviewed to identify late CS files.

Audit commentary

15 move in switches were completed during the audit period. The switch breach report recorded four late CS files for move in switches; only one of these was genuinely late. The CS was delivered one day late because emhTrade could not reach the customer to confirm that they wanted to switch out. This is recorded as a non-compliance below.

The non-compliance raised in the 2016 audit for recording the midnight read on the day of the switch was resolved in August 2016. The accuracy of the content of CS files was confirmed by checking a sample of five transfer CS files. The data contained in the files was found to be accurate.

Non-compliance	Description		
Audit Ref: 4.10 With: Clause 11 Schedule 11.3 From: one CS file	One late CS file. Potential impact: Low Actual impact: Low Audit history: Once previously Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
Low	Controls are sufficient to reduce the risk of late files most of the time. The impact is low, because one file was one day late.		
Actions taken to resolve the issue		Completion date	Remedial action status
Issue recorded and procedure reviewed.		1/11/2017	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Training has been given to operational staff regarding timely contact of customers. Also highlighted in EMHT procedures.		1/11/2017	

Audit outcome

Non-compliant

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 actual event date, must provide to the losing trader a changed validated meter reading or a permanent estimate supported by two 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 requests was examined.

The event detail report for the period from 01/11/2016 to 25/09/2017 was reviewed to identify all read change requests and acknowledgements.

Audit commentary

No read changes for switch moves were initiated during the audit period. Compliance was not assessed.

Audit outcome

Not applicable

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

Code reference

Clause 13 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 through or assume responsibility for:

- *a half hour metering installation (that is not a category 1 or 2 metering installation) at an ICP with a submission type of half hour in the registry and an AMI flag of "N"; or*
- *a half hour metering installation at an ICP that has a submission type of half hour in the registry and an AMI flag of "N" and is traded by the losing trader as non-half hour; or*
- *a non half hour metering installation at an ICP at which the losing trader trades electricity through a half hour metering installation with an AMI flag of "N".*

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 proposed event date; and*
- 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 01/11/2016 to 25/09/2017 was reviewed to identify all gaining trader switches.

Audit observation

There were no gaining trader switches initiated during the audit period; compliance was not assessed.

Audit outcome

Not applicable

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 event detail report for the period from 01/11/2016 to 25/09/2017 was reviewed to identify all gaining trader switches.

Audit observation

There were no gaining trader switches initiated during the audit period; compliance was not assessed.

Audit outcome

Not applicable

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 event detail report for the period from 01/11/2016 to 25/09/2017 was reviewed to identify all gaining trader switches.

Audit observation

There were no gaining trader switches initiated during the audit period; compliance was not assessed.

Audit outcome

Not applicable

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 01/11/2016 to 25/09/2017 was analysed to identify all switch withdrawal requests (NW) and acknowledgements (AW).

The switch breach report was checked for any late NW and AW files. The event detail report was also analysed to confirm timeliness of switch withdrawal acknowledgements.

The content of all switch withdrawal requests was reviewed.

Audit commentary

All four NWs issued were checked, and I confirmed that the correct codes were applied. Two had the code CX (customer cancellation); both were requested after the switch was completed.

All AW files were sent within five business days of the NW receipt date. All NWs were sent within six working days of the event date. No late NW or AW files were recorded on the switch breach report.

Two NWs issued by another retailer were rejected, and 12 were accepted. I reviewed the rejected NWs and found both were rejected for valid reasons.

Audit outcome

Compliant

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. The reads applied in switching files were examined in **section 4.3** for standard switches and **section 4.10** for switch moves.

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 01/11/2016 to 25/09/2017 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 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 two CX coded switch withdrawal requests; both 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 with history for 01/11/2016 - 25/09/2017 was reviewed to identify all unmetered load.

Audit commentary

emhTrade does not supply any ICPs with shared 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 with history for 01/11/2016 - 25/09/2017 was reviewed to identify all 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 MEP 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 with history for 01/11/2016 - 25/09/2017 was reviewed to identify all 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 with history for 01/11/2016 - 25/09/2017 was reviewed to identify all unmetered load.

Audit commentary

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

Audit outcome

Not applicable

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

Processes for distributed generation were reviewed. A registry list was examined to confirm whether emhTrade had supplied any ICPs with generation during the audit period.

Audit commentary

Analysis of the registry list found that emhTrade had supplied 43 ICPs with generation entered by the distributor. All have injection/export registers recorded on the registry.

The 2016 audit identified four ICPs where emhTrade had correctly recorded and was reporting generation, but the distributor had not recorded generation on the registry. The affected ICPs were checked during the audit, and the distributors have now updated the generation details on the registry.

ICP	In Aggregates	Date "I" channel present	Distributor fields populated	Distributor
0000188160UNE5B	Yes	23/11/15	Yes	Vector
0148362001LCOF1	Yes	05/07/16	Yes	Vector
0234973420LCBBB	Yes	19/05/16	Yes	Vector
0623234331LC19B	Yes	11/09/14	Yes	Vector

emhTrade did not identify any examples of bridged meters during the audit period. All ICPs have metering installed, and electricity is quantified according to the code.

Audit outcome

Compliant

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.

Audit commentary

Review of the NSP table confirmed that emhTrade is not responsible for any GIPs. Compliance was not assessed.

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

Review of a registry list with history for the period from 01/11/2016 to 25/09/2017 confirmed that emhTrade has not supplied any ICPs with submission type NHH.

Audit commentary

Compliance with these clauses was not assessed, because emhTrade does not deal with NHH readings.

Audit outcome

Not applicable

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 four 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. Upon identifying a possible defective meter, emhTrade raises a field services job to investigate.

I reviewed four examples of potential defective meters, which were identified through emhTrade's validation processes. Three of the defects related to communications issues, one related to an incorrect register number recorded in the MEP's system. In all cases the MEP was advised of the issue.

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 Metrix 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.

emhTrade had not received notification of any clock synchronisation events outside the maximum permissible errors during the audit period.

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

Review of a registry list with history for the period from 01/11/2016 to 25/09/2017 confirmed that emhTrade has not supplied any ICPs with submission type NHH.

Audit commentary

Compliance with these clauses was not assessed, because emhTrade does not deal with NHH readings.

Audit outcome

Not applicable

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

Review of a registry list with history for the period from 01/11/2016 to 25/09/2017 confirmed that emhTrade has not supplied any ICPs with submission type NHH.

Audit commentary

Compliance with this clause was not assessed, because emhTrade does not deal with NHH readings.

Audit outcome

Not applicable

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

Review of a registry list with history for the period from 01/11/2016 to 25/09/2017 confirmed that emhTrade has not supplied any ICPs with submission type NHH.

Audit commentary

Compliance with these clauses was not assessed, because emhTrade does not deal with NHH readings.

Audit outcome

Not applicable

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

Review of a registry list with history for the period from 01/11/2016 to 25/09/2017 confirmed that emhTrade has not supplied any ICPs with submission type NHH.

Audit commentary

Compliance with these clauses was not assessed, because emhTrade does not deal with NHH readings.

Audit outcome

Not applicable

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 4 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

Review of a registry list with history for the period from 01/11/2016 to 25/09/2017 confirmed that emhTrade has not supplied any ICPs with submission type NHH.

Audit commentary

Compliance with these clauses was not assessed, because emhTrade does not deal with NHH readings.

Audit outcome

Not applicable

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

Review of a registry list with history for the period from 01/11/2016 to 25/09/2017 confirmed that emhTrade has not supplied any ICPs with submission type NHH.

Audit commentary

Compliance with these clauses was not assessed, because emhTrade does not deal with NHH readings.

Audit outcome

Not applicable

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 Metrix 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 Metrix 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 Metrix 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 Metrix as MEPs. HHR volume information was reviewed to confirm trading period duration.

Audit commentary

MEPs are responsible for trading period duration, and this is reviewed as part of their audits. Review of HHR volume data for ten ICPs confirmed that trading period duration is 30 minutes.

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

Processes to archive and store raw meter data were reviewed. The oldest raw meter data available was viewed, to confirm it is retained.

I traced volumes for one month for ten ICPs from the source data to emhTrade's data repository and the HHR aggregates submissions.

Audit trails were reviewed in **section 2.4**.

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 volumes for one month for five AMS HHR ICPs and five Metrix HHR ICPs from the source data to emhTrade's data repository and the HHR aggregates submissions. All reads and volumes matched the source data. This confirmed 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 errors are detected during validation of non-half hour meter readings, one of the following must be undertaken:

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

19(1)(b) - replacement of the original meter reading by another meter reading (even if the replacement meter reading may be at a different date)

19(1)(c) - if the original meter reading cannot be confirmed or replaced by a meter reading from another interrogation, then an estimated reading is substituted and the estimated reading is marked as an estimate and it is subsequently replaced in accordance with clause 4(2).

Audit observation

Review of a registry list with history for the period from 01/11/2016 to 25/09/2017 confirmed that emhTrade has not supplied any ICPs with submission type NHH.

Audit commentary

Compliance with this clause was not assessed, because emhTrade does not deal with NHH readings.

Audit outcome

Not applicable

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 errors are detected during validation of half hour metering information the correction must be as follows:

19(2)(a) - if a check meter or data storage device is installed at the metering installation, data from this source may be substituted

19(2)(b) - in the absence of any check meter or data storage device, data may be substituted from another period if the total of all substituted intervals matches the total consumption recorded on the meter, if available, and the pattern of consumption is considered 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

Where errors are detected during validation of half-hour metering information, and check metering data is not available, data may be substituted from another period if the total of all substituted intervals

matches the total consumption recorded on a meter, if available, and the pattern of consumption is materially similar to the period in error.

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 five estimates were checked, which confirmed that the documented process is being used to create estimates.

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 on Metrix or AMS' SFTP sites, 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 confirming the process.

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

If error compensation and loss compensation are carried out as part of the process of determining accurate data, the compensation process must be documented and must comply with audit trail requirements.

Audit observation

The registry list with history for 01/11/2016 - 25/09/2017 was reviewed.

Audit commentary

emhTrade has only supplied ICPs with metering category 1, and has not completed any new connections. No ICPs have required loss compensation.

Audit outcome

Not applicable

8.4. Correction of HHR and NHH raw meter data (Clause 22(1) and (2) Schedule 15.2)

Code reference

Clause 22(1) and (2) 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:

22(2)(a) - the date of the correction or alteration

22(2)(b) - the time of the correction or alteration

22(2)(c) - the operator identifier of the reconciliation participant

22(2)(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

22(2)(e) - the technique used to arrive at the corrected data

22(2)(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 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 appropriate audit trail, the method of correction is system based as discussed in **section 8.2**.

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

Review of a registry list confirmed that emhTrade has not supplied any ICPs with submission type NHH.

Audit commentary

Compliance with this clause was not assessed, because emhTrade does not deal with NHH readings.

Audit outcome

Not applicable

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

I traced volumes for one month for ten HHR ICPs from the source data to emhTrade's data repository, to determine whether the data is rounded.

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 five estimates were reviewed.

Audit commentary

The process for HHR estimates is the same as for HHR correction, and is discussed in **section 8.2**.

I reviewed five examples of estimates and found that emhTrade used reasonable endeavours to ensure that submitted information was within the percentage specified by the Authority in all cases.

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

Review of a registry list confirmed that emhTrade has not supplied any ICPs with submission type NHH.

Audit commentary

Compliance with this clause was not assessed, because emhTrade does not deal with NHH readings.

Audit outcome

Not applicable

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.

Validation of electronic readings was also reviewed as part of the AMS and Metrix's MEP audits.

Audit commentary

Electronic meter reading information is provided by AMS and Metrix as MEPs, and data validation was reviewed as part of their MEP audits. 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 8.2**. 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.

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 Metrix and AMS. I reviewed two examples of these reports each for Metrix and AMS. They did not contain any events which required action by emhTrade; the events listed were reverse rotation on generation meters, power outages and power restorations.

emhTrade does not routinely review these event detail reports, but does refer to them before raising a job with the MEP if a validation exception is created. This is recorded as non-compliance below. emhTrade is working with Metrix to arrange for meter events that require attention to be emailed, to ensure they are treated as a priority.

Non-compliance	Description		
Audit Ref: 9.6 With: Clause 17 Schedule 15.2 From: entire audit period	Meter event reports are not routinely reviewed. 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 in most cases metering issues will be identified through emhTrade's validation processes and the event logs will be checked. The risk rating is low, because there is a small risk that an event affecting meter accuracy may not be identified through the validation checks.		
Actions taken to resolve the issue		Completion date	Remedial action status
Procedure to monitor Event files regularly implemented - to determine the presence of any material Events that are not currently covered by systematic Meter processing.		1/11/2017	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	

EMHT procedures updated in accordance with the above to Monitor Event files and MEP Event emails.	1/11/2017	
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Audit outcome

Non-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 pricing manager and 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 pricing manager and 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 pricing manager and 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 the pricing manager or 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

A registry list was reviewed for the period from 01/11/2016 to 25/09/2017 to confirm the profiles used. Processes to create buying and selling notifications were reviewed.

Audit commentary

emhTrade uses the HHR and HHE profiles; notifications for the HHE profile have been created where required. New notifications required are identified through emhTrade's admin panel checks.

When needed, trading notifications are created on the electricity reconciliation portal. There is no facility to enter profile code on the portal, so notifications are only created where emhTrade begins or ceases trading on an NSP.

Description	Issue	Remedial action
Clause 15.3 Buying and selling notifications	Traders are unable to enter profile codes when creating buying and selling notifications on the electricity reconciliation portal, making it difficult to comply with the requirements of clause 15.3.	Pass to the Electricity Authority for investigation.

Audit outcome

Compliant

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 six NSPs with a small number of ICPs to confirm the AV110 ICP days calculation was correct.

A registry list with history for the period from 01/11/2016 to 25/09/2017 was reviewed to identify any upgrades from NHH to HHR.

I reviewed variances for eight months of GR100 reports, and found no discrepancies.

Audit commentary

The process for the calculation of ICP days was examined by checking six NSPs a small number of ICPs on the August 2017 ICP days submission. The ICP days calculation was confirmed to be correct for the sample checked. In the 2016 audit, an ICP was found to be recorded against HOB1101 when it was connected to ROS1101. These NSPs were checked as part of the sample, and I confirmed that this issue has been resolved.

Review of a registry list with history confirmed that there have been no upgrades from NHH to HHR during the audit period.

The following table shows the ICP days difference between emhTrade files and the RM return file (GR100) for eight months. There were no discrepancies.

Month	Ri	R1	R3	R7	R14
Jan 2017	-	-	-	-	-
Feb 2017	-	-	-	-	-
Mar 2017	-	-	-	-	-
Apr 2017	-	-	-	-	-
May 2017	-	-	-	-	-
Jun 2017	-	-	-	-	-
Jul 2017	-	-	-	-	-
Aug 2017	-	-	-	-	-

Audit outcome

Compliant

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 with a small number of ICPs to confirm the AV120 calculation was correct.

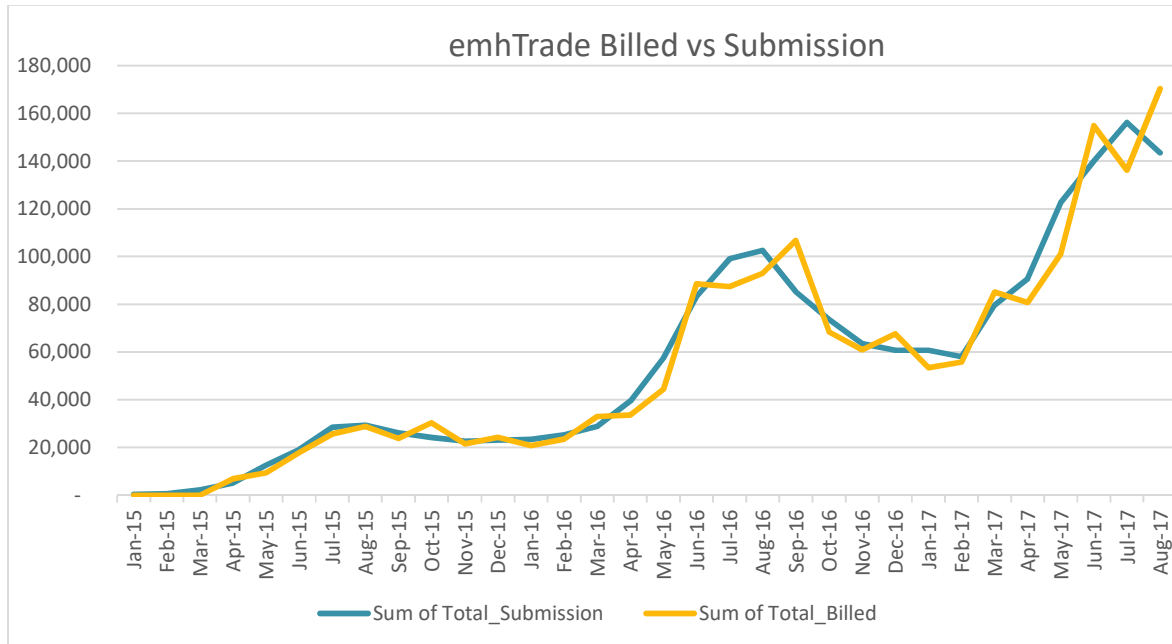
GR130 reports for January 2015 to August 2017 were reviewed to confirm whether the relationship between billed and submitted data appears reasonable.

Audit commentary

The process for the calculation of as billed volumes was examined by checking five NSPs with a small number of ICPs against invoice information. The AV120 billed consumption calculation was confirmed to be correct for the NSPs checked.

I also checked the difference between submission and electricity supplied information for a 32 month period, and the results are shown and discussed in the chart below.

The total difference is -1.46% for the two years ended March 2017 (billed lower than submission). emhTrade splits its customers into two billing streams, which are billed on alternate weeks. This, combined with customer growth, has contributed to the differences between billed and submitted data.



emhTrade monitors the difference between billed and submitted consumption monthly, and has not identified any issues.

Audit outcome

Compliant

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 for revisions 0 to 7 for three months.

The GR090 ICP Missing files were examined for August 2016 to August 2017. All differences were reviewed.

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. Compliance was confirmed.

The GR090 ICP Missing files were examined for all revisions for August 2016 to August 2017. All differences were due to timing, or have been corrected:

- An incorrect NSP being recorded for 0138772487LC4DA. This issue was identified in the 2016 audit and has now been resolved.
- Two differences related to backdated and withdrawn switches.
- One difference related to a meter change issue. After ICP 1001125430LCF7C switched out, the system ignored the period between the meter change on 10/03/2016 and the switch out on 27/01/2016, because the event date for the new meter installation was treated as being on the switch out date. This is recorded as non-compliance below. The system has been corrected for this ICP, and future submissions will be correct. emhTrade is taking action to prevent recurrence of this issue.

Late switching files are discussed in **section 4**.

Non-compliance	Description
<p>Audit Ref: 11.4 With: Clause 15.8</p> <p>From: entire audit period</p>	<p>One ICP was missing from the HHR aggregates file for December 2016 revisions one, three and seven due to incorrect treatment of a meter change after the ICP switched out.</p> <p>HHR aggregates file does not contain electricity supplied information.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Once previously</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>
Audit risk rating	Rationale for audit risk rating
<p>Low</p>	<p>Controls are rated as moderate as they are sufficient to reduce the risk of incorrect information most of the time, but there is some room for improvement.</p> <p>The impact is low because</p> <ul style="list-style-type: none"> • the requirement to report electricity supplied information is an error in the code, emhTrade is providing submission information as expected. • Review of ICP missing information only identified one ICP affected by incorrect treatment of a meter change. emhTrade is taking action to prevent recurrence of this issue.

Actions taken to resolve the issue	Completion date	Remedial action status
<p>System record corrected and tested to ensure correct operation. Reconciliation and reporting routines tested to validate future reconciliations which will correct any missing data.</p> <p>This change has been implemented and will be reflected in all subsequent reconciliations.</p>	1/11/2017	Identified
Preventative actions taken to ensure no further issues will occur	Completion date	
<p>Include fix in next system release to ensure any new cases are handled correctly.</p>	01/12/2017	

Audit outcome

Non-compliant

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

Data processes for AMS and Metrix were reviewed as part of their MEP audits.

Daylight savings processes in emhTrade’s system were observed.

Audit commentary

Daylight savings processes for AMS and Metrix 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 for the end of daylight savings in April 2017 and beginning of daylight savings in September 2017. 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**. I traced volumes for one month for ten HHR ICPs from the source data to emhTrade’s data repository and the HHR aggregates submissions. Corrections are discussed in **section 8.2**.

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

Audit commentary

No breaches had been recorded for late provision of submission information.

I checked the accuracy of the HHR aggregates and HHR volumes files in **section 11.4** and confirm compliance. I traced volumes for one month for five AMS HHR ICPs and five Metrix HHR ICPs from the source data to emhTrade's data repository and the HHR aggregates submissions. All reads and volumes matched the source data.

Audit outcome

Compliant

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**.

Audit outcome

Compliant

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

The NSP table on the registry and registry list were reviewed.

Audit commentary

emhTrade is not responsible for any GIPs; compliance was not assessed.

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

The registry list and NSP table were reviewed.

Audit commentary

emhTrade is not a local or embedded network owner; compliance was not assessed.

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; 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 reconciliation submissions were late. Corrections were reviewed in **section 8.2**.

Audit commentary

Review of alleged breaches confirmed that no reconciliation submissions were made late. Corrections are discussed in **section 8.2**.

Audit outcome

Compliant

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).

Volume information created using estimated readings must be subsequently replaced at the earliest opportunity by the reconciliation participant by volume information that has been created using validated meter readings or permanent estimates by, at the latest, the month 14 revision cycle.

A permanent estimate may be used in place of a validated meter reading, but only if, despite having used reasonable endeavours; the reconciliation participant has been unable to obtain a validated meter reading.

Audit observation

Review of a registry list confirmed that emhTrade has not supplied any ICPs with submission type NHH.

Audit commentary

Compliance with this clause was not assessed, because emhTrade does not deal with NHH readings.

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 must comprise the following:

- *half hour volume information 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) half hour volume information for the ICP; or*
 - b) 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, 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
- aggregation of the AV090 and AV140 reports is compliant.

Audit outcome

Compliant

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

Review of a registry list confirmed that emhTrade has not supplied any ICPs with submission type NHH.

Audit commentary

Compliance with this clause was not assessed, because emhTrade does not deal with NHH readings.

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

Review of a registry list confirmed that emhTrade has not supplied any ICPs with submission type NHH.

Audit commentary

Compliance with this clause was not assessed, because emhTrade does not deal with NHH readings.

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

Review of a registry list confirmed that emhTrade has not supplied any ICPs with submission type NHH.

Audit commentary

Compliance with this clause was not assessed, because emhTrade does not deal with NHH readings.

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

The registry list with history was reviewed for the period from 01/11/2016 to 25/09/2017 and confirmed no ICPs have had profile changes, and no ICPs with submission type NHH have been supplied.

Audit commentary

Compliance with this clause was not assessed, because emhTrade does not deal with NHH readings.

Audit outcome

Not applicable

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

Submission information provided to the reconciliation manager must be aggregated to the following level:

- *NSP code (clause 8(a))*
- *reconciliation type (clause 8(b))*
- *profile (clause 8(c))*
- *loss category code (clause 8(d))*
- *flow direction (clause 8(e))*
- *dedicated NSP (clause 8(f))*
- *trading period for half hour metered ICPs and consumption period or day for all other ICPs (clause 8(g)).*

Audit observation

The process to ensure that submissions are accurate was discussed in **section 12.2**, and aggregation was checked in **section 11.4**.

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

Audit commentary

Processes to ensure aggregation factors are correct are discussed in **section 2.1**.

The 2016 audit found ICP 0138772487LC4DA, was against the incorrect NSP. The correct NSP is ROS1101, but submission has occurred against HOB1101. This issue has now been corrected, and the ICP is reported against the correct NSP for revision submissions.

Audit outcome

Compliant

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

Review of 12 AV090 and AV140 reports confirmed that submission information is appropriately rounded to 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

Review of a registry list confirmed that emhTrade has not supplied any ICPs with submission type NHH.

Audit commentary

Compliance with this clause was not assessed, because emhTrade does not deal with NHH readings.

Audit outcome

Not applicable

CONCLUSION

The audit found six non-compliance issues, one recommendation is made, and one issue is raised.

The non-compliances found were minor. Very small numbers of ICPs were affected, and where late files were identified they were between one and two business days late. All incorrect data found was corrected promptly during the audit.

Several non-compliances identified in the 2016 audit have been cleared, including all previously raised issues with AN and CS file content. Non-compliance because the HHR aggregates file does not contain electricity supplied information still exists, because the code has not been changed.

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 10, which results in an indicative audit frequency of 18 months. I have considered this result in conjunction with emhTrade's responses and agree with the recommended audit period.

The matters raised are shown in the tables below:

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	Three instances of incorrect data recorded on the registry.	Moderate	Low	2	Cleared. The data has been corrected, backdated to the switch in date.
ANZSIC Codes	3.6	9 (1)(k) of Schedule 11.1	ICP 0130384585LC16E had a T994 (don't know) ANZSIC code recorded. A backdated correction has now been processed.	Moderate	Low	2	Cleared. The data has been corrected, backdated to the switch in date.
CS files	4.3	5 Schedule 11.3	Two late standard CS files.	Strong	Low	1	Identified.
CS files	4.10	11 Schedule 11.3	One late switch move CS file.	Strong	Low	1	Identified.
Meter event reporting	9.6	17 Schedule 15.2	Meter event reports are not routinely reviewed.	Moderate	Low	2	Identified.

Subject	Section	Clause	Non Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
HHR aggregates	11.4	15.8	One ICP was missing from the HHR aggregates file for December 2016 revisions one, three and seven due to incorrect treatment of a meter change after the ICP switched out. HHR aggregates file does not contain electricity supplied information.	Moderate	Low	2	Identified.
Future Risk Rating						10	

Recommendations

Subject	Section	Description	Recommendation
Relevant information	2.1	Clause 10.6, 11.2, 15.2 Data consistency checks	Validate ANZSIC codes, and correct any codes beginning with T. Compare profile code and MEP, and update any incorrect codes.

Issues

Subject	Section	Description	Issue
Buying and selling notifications	11.1	Clause 15.3 Buying and selling notifications	Traders are unable to enter profile codes when creating buying and selling notifications on the electricity reconciliation portal, making it difficult to comply with the requirements of clause 15.3.

PARTICIPANT RESPONSE

emhTrade is a data driven organisation that prides itself on the timeliness and accuracy of our processes. It is disappointing for us to have had the issues that have been highlighted in this report and we have ensured in both cases that the issues were resolved with highest priority when the exceptions were detected.

We continue to develop our systems as we learn more about any specific edge cases and the valuable results of this audit are included in our development path.