

ELECTRICITY INDUSTRY PARTICIPATION CODE  
MATERIAL CHANGE AUDIT REPORT

VERITEK

For

HUNET LIMITED

Prepared by: Rebecca Elliot

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## EXECUTIVE SUMMARY

This Material Change audit was performed at the request of **Hunet Ltd (Hunet)**, to assess the compliance of their new submission system.

Clause 16A.11 requires that if a material change to a system or process is a change that is likely to affect the ability of the participant to comply with any relevant provision of the code, then a material change audit must be undertaken prior to the change taking place.

The audit was conducted in accordance with the relevant sections from the Guideline for Reconciliation Participant Audits version 7.1 to prove compliance.

Hunet decided to create a new submission system as too much critical knowledge of how the existing system was structured was unknown. They have addressed this by creating a new submission system and have sought John Candy Consulting's guidance with this. In this audit I have assessed the new submission system for compliance and I found compliance with all relevant clauses.

I recommend Hunet engage John Candy to peer review the first two months of submission files to confirm that the submission system works as expected once in production. With this confirmed a longer audit period could be considered for Hunet when their Reconciliation Participant audit is reviewed.

## AUDIT SUMMARY

### NON-COMPLIANCES

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			Nil				

### RECOMMENDATIONS

Subject	Section	Recommendation	Description
Electricity conveyed & notification by embedded generators	6.1	Update Hunet's system to track generation volumes within the customer's account.	Investigating

## 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

The Electricity Authorities website was checked for current exemptions relevant to this audit scope.

#### Audit commentary

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

### 1.2. Structure of Organisation

Hunet's organisational structure was provided:

#### **Board**

Name	Position
Jakob Inho Lee	Managing Director
JJ Jang	General Manager

#### **Operations**

Name	Position	Job Description
Ria Na	Operations Manager	-General operation review -Price review and management -General operation task -Risk Management -Reading management

## **System Development and Data**

<b>Name</b>	<b>Position</b>	<b>Job Description</b>
Louis Kwon	System Development and Data Team Manager	-Managing reports and billing invoices -Reading management -Website management
YJ Moon	Programmer	-IPBMS development and maintenance
Jin Moon	Network engineer	-Network engineering

### **1.3. Persons involved in this audit**

Auditor:

<b>Name</b>	<b>Company</b>	<b>Role</b>
Rebecca Elliot	Veritek Limited	Lead Auditor
Steve Woods	Veritek Limited	Supporting Auditor

Personnel assisting in this audit were:

<b>Name</b>	<b>Title</b>
Ria Na	Operations Manager
Joon Moon	Senior Software Developer

### **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**

No agents were used as a part of this audit. John Candy consulting was engaged for guidance, but they were not involved in the creation of the submission system.

#### **Audit commentary**

Not applicable



### 1.5. Hardware and Software

Hunet has a bespoke MySQL database on a Linux operating system. The new submission system is a part of the SQL database. Daily backups are performed to a remotely hosted server.

### 1.6. Breaches or Breach Allegations

There are no breach allegations relevant to the scope of this audit.

### 1.7. ICP Data

Hunet provided a list file as at March 2018. The list file was examined by status:

Status	Number of ICPs March 2018
Active (2,0)	5,194
Inactive – new connection in progress (1,12)	0
Inactive – electrically disconnected vacant property (1,4)	18
Inactive – electrically disconnected remotely by AMI meter (1,7)	37
Inactive – electrically disconnected at pole fuse (1,8)	0
Inactive – electrically disconnected due to meter disconnected (1,9)	12
Inactive – electrically disconnected at meter box fuse (1,10)	0
Inactive – electrically disconnected at meter box switch (1,11)	2
Inactive – electrically disconnected ready for decommissioning (1,6)	0
Inactive – reconciled elsewhere (1,5)	0
Decommissioned (3)	32

The active ICPs are summarised by category in the table below:

Metering Category	March 2018
1	5179
2	15
3	0
4	0
5	0
9	0
Blank	0

#### 1.8. Authorisation Received

No authorisation was required as a part of this audit.

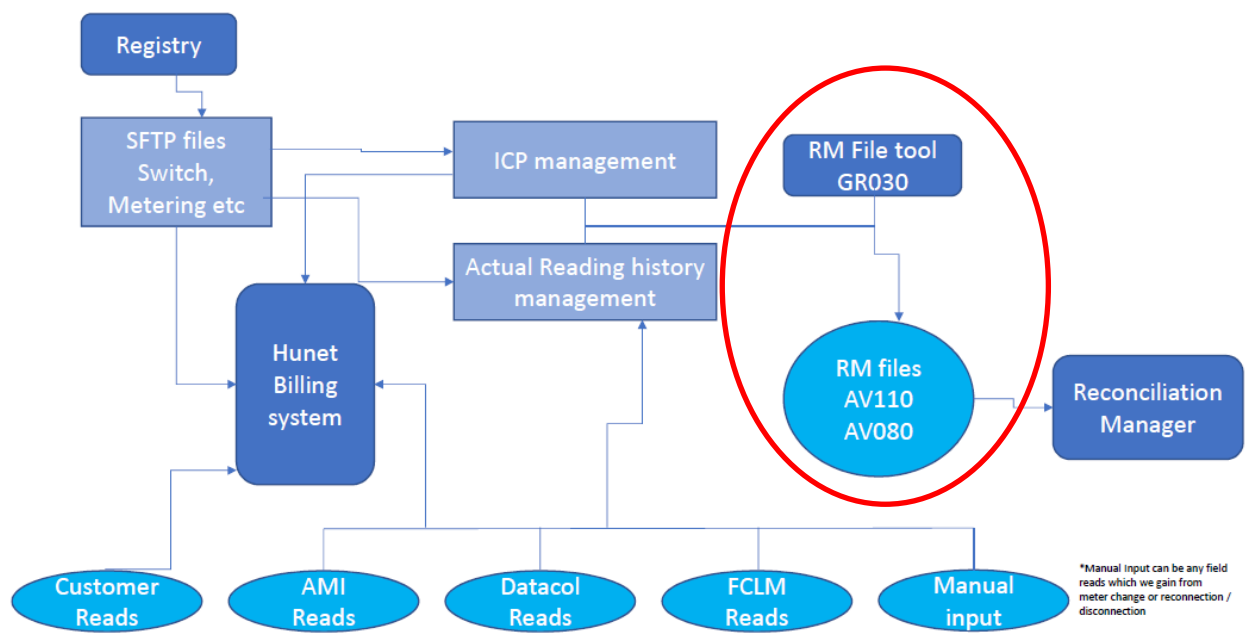
#### 1.9. Scope of Audit

This Material Change audit was performed at the request of **Hunet Ltd (Hunet)**, to assess the compliance of their new submission system

Clause 16A.11 requires that if a material change to a system or process is a change that is likely to affect the ability of the participant to comply with any relevant provision of the code, then a material change audit must be undertaken prior to the change taking place.

The audit was conducted in accordance with the relevant sections from the Guideline for Reconciliation Participant Audits version 7.1 to prove compliance.

The scope of this audit covers the replacement submission system. Hunet decided to create a new submission system as too much critical knowledge of how the existing system was structured was unknown. The core customer management system is unchanged. The submission system is SQL database on a Linux operating system. The system diagram below details the system structure. The red circle indicates the area being assessed as part of this material change audit:



#### 1.10. Summary of previous audit

Not applicable

## 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 and observed. 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.

#### Audit commentary

The registry validation process was examined. There have been no changes made to it as a result of the submission system change. Hunet continues to monitor the registry notification files to update their database when registry information changes. The ICP management report is run monthly and this identifies any consumption on active vacant or disconnected vacant, and any meter mismatches. This was confirmed by examining the list file provided for Hunet's Reconciliation Participant audit. I have included the findings below for completeness.

The analysis of the list file returned the following findings:

Item No.	Issue	March 2018	October 2017	Comments
1	ICP not managed in Hunet's system	0	0	Compliance confirmed
2	Status mismatch between registry and Hunet	0	0	Compliance confirmed
3	Active with no MEP	0	-	Compliance confirmed
4	Incorrect submission flag	0	-	Compliance confirmed
5	Blank ANZSIC codes	0	-	Compliance confirmed
6	ANZSIC "T9.." coded	0	7	Compliance confirmed
7	Category 9 but Active with MEP and UML "N"	0	-	Compliance confirmed

Item No.	Issue	March 2018	October 2017	Comments
8	ICPs with Distributor unmetered load populated but retail unmetered load is blank	0	-	Compliance confirmed - Hunet do not accept ICPs with unmetered load
9	ICPs with unmetered load flag Y but load is recorded as zero	0	-	Compliance confirmed - Hunet do not accept ICPs with unmetered load
10	ICPs with incorrect shared unmetered load	0	-	Compliance confirmed - Hunet do not accept ICPs with unmetered load
11	ICPs with Distributed Generation indicated but no DG profile	4	0	See <b>section 6.1</b>

The management of the registry information continues to be well managed during the audit period. Hunet started accepting ICPs with distributed generation in December 2017 and will commence submitting the generation volumes where appropriate. This is discussed in **section 6.1**.

As discussed in the **Executive Summary** and **section 6.1**, the new submission system will correctly manage generation volumes.

As discussed in the **Executive Summary**, Hunet have engaged John Candy to advise in developing a new submission system and it is expected to address the current submission errors. The incorrect information that has been submitted will be addressed through the revision process.

#### Audit outcome

Compliant

## 2.2. 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

The data transmission processes is unchanged as it occurs in the existing Hunet SQL system.

#### Audit commentary

Not applicable

#### Audit outcome

Not applicable

## 2.3. 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 in relation to the material change.

### Audit commentary

This area is discussed in a number of sections in this report.

### 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

The audit trail processes are unchanged.

### Audit commentary

Not applicable

#### Audit outcome

Not applicable

### 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

This clause is outside of the scope of this audit.

#### Audit commentary

Not applicable.

#### Audit outcome

Not applicable

### 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

This clause is outside of the scope of this audit.

#### Audit commentary

Not applicable.

#### Audit outcome

Not applicable

### 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

This clause is outside of the scope of this audit.

#### Audit commentary

Not applicable.

#### Audit outcome

Not applicable

### 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**

This clause is outside of the scope of this audit.

#### **Audit commentary**

Not applicable.

#### **Audit outcome**

Not applicable

### **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 one or more metering installations for the point of connection.*

#### **Audit observation**

This clause is outside of the scope of this audit.

#### **Audit commentary**

Not applicable.

#### **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**

This clause is outside of the scope of this audit.

#### **Audit commentary**

Not applicable.

#### **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**

This clause is outside of the scope of this audit.

#### **Audit commentary**

Not applicable.

#### **Audit outcome**

Not applicable

### **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**

This clause is outside of the scope of this audit.

**Audit commentary**

Not applicable.

**Audit outcome**

Not applicable

**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**

This clause is outside of the scope of this audit.

**Audit commentary**

Not applicable.

**Audit outcome**

Not applicable

### 3. MAINTAINING REGISTRY INFORMATION

The maintaining of registry information is not affected by the new submission system and is therefore outside of the scope of this audit.

#### 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

This clause is outside of the scope of this audit.

##### Audit commentary

Not applicable.

##### 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

This clause is outside of the scope of this audit.

#### Audit commentary

Not applicable.

#### 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

This clause is outside of the scope of this audit.

#### Audit commentary

Not applicable.

#### Audit outcome

Not applicable

### 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)):*
  - o *arrange for a final interrogation to take place prior to or upon meter removal (clause 11.18(3)(a)); and*
  - o *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**

This clause is outside of the scope of this audit.

#### **Audit commentary**

Not applicable.

#### **Audit outcome**

Not applicable

### **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**

This clause is outside of the scope of this audit.

#### **Audit commentary**

Not applicable.

#### **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

This clause is outside of the scope of this audit.

#### Audit commentary

Not applicable.

#### Audit outcome

Not applicable

### 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

This clause is outside of the scope of this audit.

#### Audit commentary

Not applicable.

#### Audit outcome

Not applicable

### 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**

This clause is outside of the scope of this audit.

#### **Audit commentary**

Not applicable.

#### **Audit outcome**

Not applicable

### **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**

This clause is outside of the scope of this audit.

#### **Audit commentary**

Not applicable.

#### **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**

This clause is outside of the scope of this audit.

#### **Audit commentary**

Not applicable.

#### **Audit outcome**

Not applicable



## 4. PERFORMING CUSTOMER AND EMBEDDED GENERATOR SWITCHING

The performing of customer and embedded generator switching is not affected by the new submission system and is therefore outside of the scope of this audit.

### 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

This clause is outside of the scope of this audit.

#### Audit commentary

Not applicable.

#### Audit outcome

Not applicable

### 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):*
- *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*
- *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**

This clause is outside of the scope of this audit.

#### **Audit commentary**

Not applicable.

#### **Audit outcome**

Not applicable

### **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**

The average daily consumption was not calculating correctly for ICPs with more than one meter or register. Hunet have included this in the new submission system. A sample of five ICPS was checked using the typical sample methodology to confirm compliance.

#### **Audit commentary**

The sample checked confirmed this is calculating correctly and will be used in the CS file.

#### **Audit outcome**

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

This clause is outside of the scope of this audit.

##### Audit commentary

Not applicable.

##### Audit outcome

Not applicable

#### 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

This clause is outside of the scope of this audit.

#### Audit commentary

Not applicable.

#### Audit outcome

Not applicable

### 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

This clause is outside of the scope of this audit.

#### Audit commentary

Not applicable.

#### Audit outcome

Not applicable

### 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

This clause is outside of the scope of this audit.

#### Audit commentary

Not applicable.

#### Audit outcome

Not applicable

### 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:*
  - o *confirmation of the switch event date; and*
  - o *a valid switch response code; and*
  - o *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

This clause is outside of the scope of this audit.

#### Audit commentary

Not applicable.

#### Audit outcome

Not applicable

### 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

This clause is outside of the scope of this audit.

#### Audit commentary

Not applicable.

#### Audit outcome

Not applicable

### 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

This clause is outside of the scope of this audit.

#### Audit commentary

Not applicable.

#### Audit outcome

Not applicable

### 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 four 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**

This clause is outside of the scope of this audit.

#### **Audit commentary**

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**

This clause is outside of the scope of this audit.

#### **Audit commentary**

Not applicable.

#### **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**

This clause is outside of the scope of this audit.

#### **Audit commentary**

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**

This clause is outside of the scope of this audit.

#### **Audit commentary**

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 2 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**

This clause is outside of the scope of this audit.

#### **Audit commentary**

Not applicable.

#### 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

This clause is outside of the scope of this audit.

##### Audit commentary

Not applicable.

##### Audit outcome

Not applicable

#### 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

This clause is outside of the scope of this audit.

##### Audit commentary

Not applicable.

##### Audit outcome

Not applicable

## 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

This clause is outside of the scope of this audit.

#### Audit commentary

Not applicable.

#### Audit outcome

Not applicable

## 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

This clause is outside of the scope of this audit.

### Audit commentary

Not applicable.

### Audit outcome

Not applicable

## 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

This clause is outside of the scope of this audit.

### Audit commentary

Not applicable.

### Audit outcome

Not applicable

#### 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

This clause is outside of the scope of this audit.

##### Audit commentary

Not applicable.

##### 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

Hunet have accepted ICPs with distributed generation but their current submission file does not support distributed generation. This material change assessed the management of ICPS with distributed generation.

#### Audit commentary

Hunet are now accepting ICPs with distributed generation. Examination of the list file identified Hunet has four ICPs with distributed generation installed. Distributed generation was added to two existing ICPs and two ICPs have switched in during the audit period.

ICP	Distributed generation added to the registry	Joined Hunet
0000196611UN860	6/12/2017	24/07/2017
0000205304UN317	27/08/2015	4/12/2017
0000596796UN05B	6/12/2017	20/12/2016
0001419315UN140	14/10/2013	26/01/2018

The new submission file was reviewed in relation to these ICPs and confirmed that it will correctly record this load as injection. Hunet understands that for those participants who wish to gift their generation they will need to advise the Reconciliation Manager of the specific ICPs and this volume is not required to be included in the submission file. Hunet are completing these agreements with these customers. I noted that the reads for generation were within the reading database but were not imported into the customer's account and the generation volumes and associated credits were being calculated manually and applied to the customer's account, therefore there is not a complete audit trail for these volumes in the customer's account. I recommend that Hunet's system is updated to correctly track these volumes in the customer database.

Description	Recommendation	Audited party comment	Remedial action
Electricity conveyed & notification by embedded generators	Update Hunet's system to track generation volumes within the customer's account.	Hunet will pay 8 cents per kWh of energy exported to the grid on customer's bill for generation volumes. Hunet will update our system to correctly track these volumes in the customer database.	Investigating

#### 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

A registry list with history was reviewed for the audit period to confirm that Hunet has not supplied any GIPs.

#### Audit commentary

This clause is outside of the scope of this audit.

#### 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

A registry list with history was reviewed to confirm that Hunet has only used the RPS profile during the audit period.

#### Audit commentary

Examination of the list file found that Hunet has only used the RPS profile, and control devices are not used for reconciliation purposes.

#### 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

This process remains unchanged and is outside of the scope of this audit. The submission of these volumes is within the scope of this audit and are discussed in **section 12.11**.

#### Audit commentary

Not applicable

#### Audit outcome

Not applicable



## 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

The data collection process remains unchanged and was confirmed as part of Hunet's reconciliation participant audit.

### Audit commentary

Compliant

### Audit outcome

Compliant

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

### Code reference

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

### Code related audit information

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

*All validated meter readings must be derived from meter readings.*

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

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

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

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

### Audit observation

The data collection process remains unchanged and the process of validation is unchanged.

### Audit commentary

This functionality remains unchanged and the reads used for submission were confirmed to be derived correctly.

### Audit outcome

Compliant

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

### Code reference

*Clause 6 Schedule 15.2*

### Code related audit information

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

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

### Audit observation

The application of meter readings process is unchanged. The application of meter reads was checked for historic estimate calculations.

### Audit commentary

Examination of the HE calculations confirmed that meter reads are applied as required by this clause.

## Audit outcome

Compliant

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

#### Code reference

Clause 7(1) and (2) Schedule 15.2

#### Code related audit information

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

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

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

#### Audit observation

The management of meter readings is unchanged and is outside of the scope of this audit.

#### Audit commentary

Not applicable

#### 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).*

*Provision of meter read frequency reports to the Authority, no later than 20 business days after the end of the month.*

#### Audit observation

The management of meter readings is unchanged and is outside of the scope of this audit.

#### Audit commentary

Not applicable

#### 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 four months, for which consumption information is required to be reported into the reconciliation process. A validated meter reading is obtained at least once every four months for 90% of the non-half hour metered ICPs.*

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

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

##### Audit observation

The management of meter readings is unchanged and is outside of the scope of this audit.

##### Audit commentary

Not applicable

##### 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

The management of meter readings is unchanged and is outside of the scope of this audit.

##### Audit commentary

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

A registry list was reviewed for the audit period to confirm that all HHR meters supplied by Hunet have AMI installed, and a submission type NHH.

### Audit commentary

Hunet does not deal with any HHR data.

### Audit outcome

Not applicable

## 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

A registry list was reviewed for the audit period to confirm that all HHR meters supplied by Hunet have AMI installed, and a submission type NHH.

### Audit commentary

Hunet does not deal with any HHR data.

#### Audit outcome

Not applicable

#### 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

A registry list was reviewed for the audit period to confirm that all HHR meters supplied by Hunet have AMI installed, and a submission type NHH.

##### Audit commentary

Hunet does not deal with any HHR data.

##### Audit outcome

Not applicable

## 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  $\pm 0.1\%$  ( $\pm 2$  seconds).*

#### Audit observation

Hunet trades all ICPs as NHH ICPs therefore the trading period requirement is not applicable.

#### Audit commentary

Hunet does not deal with any HHR data.

#### Audit outcome

Not applicable

### 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

The management of meter readings is unchanged and is outside of the scope of this audit.

#### Audit commentary

Not applicable

#### Audit outcome

Not applicable

### 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**

Hunet does not deal with any non-metering information.

**Audit outcome**

Not applicable



## 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

Processes for correction of NHH meter readings were reviewed and assessed as part of the material change to confirm that corrections are calculated correctly, and these will flow through into submission correctly.

A sample of eight ICPs with multipliers were selected using the typical sampling methodology to confirm multipliers are being applied correctly.

#### Audit commentary

The management of corrections was checked. Where errors are detected during validation of non-half hour meter readings then firstly a check reading is performed. If an original meter reading cannot be confirmed by a check reading then an estimated reading is used which is appropriately labelled. The estimated read is calculated based on the average daily consumption.

As recorded in **section 2.1**, the ICP management report is run monthly and this identifies any consumption on active vacant or disconnected vacant and any ICPs identified are investigated and corrections are processed as described above.

I checked five ICPs with active vacant consumption present, five examples of stopped or defective meters and five ICPs with bridged meters. Consumption was correctly calculated for all of the ICPs and these volumes flowed through correctly into the submission file. Compliance can be confirmed in the new system for those examples checked. The allocation of these volumes is discussed in detail in **Section 12.11**.

The sample of ICPs with multipliers checked confirmed compliance.

#### Audit outcome

Compliant

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

### Code reference

*Clause 19(2) Schedule 15.2*

### Code related audit information

*If 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

A registry list was reviewed for the audit period to confirm that all HHR meters supplied by Hunet have AMI installed, and a submission type NHH.

### Audit commentary

Hunet does not deal with any HHR data.

### Audit outcome

Not applicable

## 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

A registry list was reviewed for the audit period to confirm that all HHR meters supplied by Hunet have AMI installed, and a submission type NHH.

### Audit commentary

Hunet does not deal with any HHR data.

### 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

If the MEP is providing the raw data to Hunet then it is their responsibility to ensure that raw data cannot be edited. Datacol, as an agent to Hunet, holds NHH raw meter data and their audit report is outside of the scope of this audit.

Corrections are discussed in **Section 8.1**, which confirmed that raw meter data is not overwritten as part of the correction process. Audit trails are discussed in **Section 2.4**.

##### Audit commentary

There were no examples of corrections to raw metering data available. Consumption is estimated where a reading is unavailable.

##### 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

The provision of estimated reads to other participants during switching is unchanged and is outside of the scope of this audit.

Correct identification of estimated reads, and review of the estimation process was assessed in **Section 8.1 Correction of NHH meter readings**.

#### Audit commentary

Estimated readings are clearly identified as required by this clause.

#### 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

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

#### Audit commentary

This was assessed in the new NHH submission system and initially found reads were being used as expected except for estimated start reads and end reads. These should be treated as permanent estimates. This has been corrected and the submission file provided post site audit confirms this has been corrected for the sample checked. This is discussed in detail in **sections 12.8 and 13.3**.

#### Audit outcome

Compliant

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

#### Code reference

Clause 3(5) Schedule 15.2

#### Code related audit information

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

#### Audit observation

The sample checked as part of the reconciliation participant audit undertaken in parallel with this material change audit traced a sample of meter data from the source files to Hunet's systems, to confirm whether readings were rounded or truncated on import.

#### Audit commentary

This was checked and confirmed to be correct in the new submission system.

#### 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

A registry list was reviewed for the audit period to confirm that all HHR meters supplied by Hunet have AMI installed, and a submission type NHH.

#### Audit commentary

Hunet does not deal with any HHR data.

#### Audit outcome

Not applicable

## 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

This process was reviewed as a part of Hunet's Reconciliation Participant audit undertaken in parallel with this audit. I reviewed and observed the NHH data validation process, including checking a sample of data validations and confirm that corrections are flowing to submission as expected.

### Audit commentary

There have been no changes to the data validation process or system as part of this material change. Compliance was confirmed in Hunet's Reconciliation Participant audit.

Reporting of consumption where an ICP is inactive for part of a period is discussed further in **section 12.11**.

Five examples of defectives meters were checked. The new submission file was checked to confirm these volumes will be submitted correctly and this was confirmed for the sample checked. This is confirmed in **Section 12.11**.

The matter of "bypassed" or bridged metering was evaluated. Hunet were not able to submit these values in their existing submission system. Five examples were checked. Examination of the new submission file confirmed that these volumes were present and correct for the sample checked. This is discussed in **section 8.1**.

Processes to review reconciliation submission information are discussed in **section 12.2**.

### Audit outcome

Compliant

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

### Code reference

Clause 17 Schedule 15.2

### Code related audit information

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

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

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

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

*17(4)(c) - checks of unexpected zero 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

Submission type is NHH for all ICPs, and data is validated as described in **Section 9.5 NHH metering information**.

The management of event logs is outside of the submission system and therefore outside of the scope of this audit.

### Audit commentary

Not applicable

### Audit outcome

Not applicable

## 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

A registry list was reviewed for the audit period to confirm that all HHR meters supplied by Hunet have AMI installed, and a submission type NHH.

#### Audit commentary

Hunet does not deal with any HHR data.

#### 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

Hunet does not gave any grid connected generation.

#### Audit commentary

Not applicable



#### 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

A registry list was reviewed for the audit period to confirm that all HHR meters supplied by Hunet have AMI installed, and a submission type NHH.

#### Audit commentary

Hunet does not deal with any HHR data.

#### 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

A registry list was reviewed for the audit period to confirm that all HHR meters supplied by Hunet have AMI installed, and a submission type NHH.

#### Audit commentary

Hunet does not deal with any HHR data

#### 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 audit period to confirm that only the RPS profile was used.

#### Audit commentary

Hunet is currently only using the RPS profile and once the material change for the new NHH submission file is approved they will also use the RPS PV1 profile for those ICPs with generation being submitted. Neither of these profiles requires a trading notification.

#### Audit outcome

Not applicable

### 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 four NSPs with a small number of ICPs to confirm the AV110 ICP days calculation was correct. I also checked this in the ICP level file and in the HE scenario checks.

### Audit commentary

The checks conducted confirmed ICP days were calculating as expected.

### 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 calculating and submitting electricity supplied information was examined by checking individual invoices for a selection of four NSPs with a small number of ICPs to ensure the billed amount equalled the figure in the ICP level file which forms the basis of the aggregate file sent to the RM.

### Audit commentary

The sample checked confirmed the values to be correct and reporting as expected.

### 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**

A registry list was reviewed for the audit period to confirm that all HHR meters supplied by Hunet have AMI installed, and a submission type NHH.

**Audit commentary**

Hunet does not deal with any HHR data.

**Audit outcome**

Not applicable

## 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

A registry list was reviewed for the audit period to confirm that all HHR meters supplied by Hunet have AMI installed, and a submission type NHH.

#### Audit commentary

Hunet does not deal with any HHR data.

#### Audit outcome

Not applicable

### 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

This clause relates to the timeliness of files and whether they include all ICPs. Hunet have created a new submission system and have sought John Candy's guidance with this. The new submission file was assessed by checking four NSPs with a small number of ICPs to confirm whether all ICPs were included.

#### Audit commentary

The check of the new file confirmed that all ICPs were included as expected.

#### 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**.

The process to ensure that AV080 submissions are accurate was reviewed. The process for aggregating the AV080 was examined by checking four NSPs with a small number of ICPs. Aggregation is checked under **section 13.2**. The file was checked to confirm zeroing occurs.

Hunet's new submission system was assessed to confirm compliance as part of the material change audit.

#### Audit commentary

The forward and historic estimate processes are discussed in the sections below. Multipliers are correctly applied. This information flows through to the submission system and is applied to the relevant revision periods.

The ICP level AV080 file is prepared from the registry records and includes all possible combinations of aggregation factors. Zeros are populated where there are not active ICPs for a combination. This ensures there are no issues with "zeroing" of combinations where there were ICPs, but they have had backdated registry changes to aggregation factors.

High level validation occurs using the detail check file provided by John Candy, this checks for exceptions. This validation will be carried out prior to the sending of files to the reconciliation manager.

#### 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

Hunet does not supplied any GIPs and does not intend to. Therefore this is outside of the scope of this audit.

#### Audit commentary

Not applicable

#### 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

Hunet is not a local or embedded network owner and does not intend to become one. Therefore this is outside of the scope of this audit.

#### Audit commentary

Not applicable.

#### 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

Hunet does not supplied any GIPs and does not intend to. Therefore this is outside of the scope of this audit.

#### Audit commentary

Not applicable.

#### 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

A sample of corrections were reviewed to ensure that they flowed through to Hunet's new submission system.

#### Audit commentary

I checked five ICPs with active vacant consumption present, five examples of stopped or defective meters and five ICPs with bridged meters. Consumption was correctly calculated for all of the ICPs and these volumes flowed through correctly into the submission file. Compliance can be confirmed in the new system for those examples checked. The allocation of these volumes is discussed in detail in **Section 12.11**.

#### 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

Hunet's new submission system was assessed to confirm compliance as part of the material change audit.

### Audit commentary

This was assessed in the new NHH submission system and initially found reads were being used as expected except for estimated start and end reads. These should be treated as permanent estimates. This has been corrected and the submission file provided post site audit confirms this has been corrected for the sample checked. This is discussed in detail in **Section 13.3**.

### Audit outcome

Compliant

## 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 repor. (clause 2(3)(b)).*

### Audit observation

Hunet does not supply any ICPs with

- submission type HHR
- a profile apart from RPS or RPS PV1
- unmetered load.

As noted in **Section 12.2**, due to the change of staff in the previous audit too much critical knowledge of how the existing system was structured was unknown. Hunet have addressed this by creating a new submission file and have sought John Candy's guidance with this. This system was assessed by checking five NSPs with a small number of ICPs to confirm compliance in test files.

#### Audit commentary

The review of the new submission file confirmed that the submission information for each NSP for the relevant consumption periods was present in accordance with these clauses; the submission information includes NHH volume information only and multipliers are correctly applied. This information flows through to the submission system and is applied to the relevant revision periods.

Aggregation of the AV080 and AV110 submissions are covered in **sections 13.2** and **11.2** respectively.

#### 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

Hunet's new submission system was assessed to confirm compliance as part of the material change audit.

#### Audit commentary

I reviewed test AV080 submissions for a diverse sample of months and revisions and found confirm that forward and historic estimates are included and identified.

The permanence of meter readings is reviewed in **Section 12.8**. The methodology to create forward estimates is reviewed in **Section 12.12**.

#### Audit outcome

Compliant

### 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 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.*

### Audit observation

The historic estimate process was assessed against the new submission file output from the new submission system. Hunet was supplied with a list of scenarios, and where possible for individual ICPs a manual HE calculation was conducted and compared to the result from Hunet's new submission system.

### Audit commentary

As detailed in **section 8.1**, I found that corrections have been calculated correctly.

Hunet provided examples of historic estimate calculations which were reviewed in relation to the new submission file. I found that correct shape files had been applied and that all scenarios that could be tested were confirmed to be compliant.

Test	Scenario	Test expectation	Result
A	ICP becomes Inactive part way through a month.	Consumption is only calculated for the Active portion of the month.	Compliant
B	ICP becomes active then inactive within a month.	Consumption is only calculated for the Active portion of the month.	Compliant
C	ICP becomes inactive, then active, then inactive again within a month.	Consumption is only calculated for the Active portion of the month.	No example
D	Network/GXP/Connection (POC) alters partway through a month.	Consumption is separated and calculated for the separate portions of where it is to be reconciled to.	Compliant
E	ICP starts on the 1st day of a month.	Consumption is calculated to include the 1st day of responsibility.	Compliant
F	ICP ends on the Last Day of the month.	Consumption is calculated to include the last day of responsibility.	No example
G	ICP starts part way through a month.	Consumption is calculated to include the 1st day of responsibility.	Compliant
H	ICP ends part way through a month.	Consumption is calculated to include the last day of responsibility.	Compliant
I	ICP is Lost and Won Back in a month.	Consumption is calculated for each day of responsibility.	No example

Test	Scenario	Test expectation	Result
J	Unmetered load for a full month	Consumption is calculating based on daily unmetered kWh for full month.	N/A Hunet do not trade ICPs with unmetered load
K	Unmetered load for a part month	Consumption is calculating based on daily unmetered kWh for active days of the month.	N/A Hunet do not trade ICPs with unmetered load
L	ICP Starts on 1st and Ends on Last day of month.	Consumption is calculated for each day of responsibility.	No example
M	Rollover Reads	Consumption is calculated correctly in the instance of meter rollovers.	Compliant
N	ICP with a photo read during the month	Photo reads are not used to calculate historic estimate.	No example
O	ICP has a meter with a multiplier greater than 1	The multiplier is applied correctly.	Compliant

The scenarios tested prove that the expected HE scenarios are expected to be work correctly in Hunet's new submission system for all scenarios as the scenarios tested are the most common occurrences and those with no example have the same principals applied and therefore these are also expected to work.

#### Audit outcome

Compliant

### 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

The process to create forward estimates remains unchanged. This was examined as part of this material change audit.

#### Audit commentary

Hunet's forward estimate process is based on a "straight line" methodology, and where no historical information is available, the average daily consumption from the CS file is used. As a last resort, a "forward default" estimate of four units per day is used for residential customers and an agreed daily value with commercial customers. This meets the requirements of this clause.

As discussed in **sections 9.2** and **12.8**, reads were being used as expected except for estimated start reads and end reads. These should be treated as permanent estimates. This has been corrected and the submission file provided post site audit confirms this has been corrected for the sample checked.

#### **Audit outcome**

Compliant

### **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**

Hunet will start to use the RPS PV1 profile so that distributed generation can be submitted.

#### **Audit commentary**

Hunet will use a validated meter reading or a permanent estimate on the day that the change is effective, once the RPS PV1 profile is used. I note that these ICPs are all AMI therefore a read is expected to be gained when the profiles are changed.

#### **Audit outcome**

Compliant

## 13. SUBMISSION FORMAT AND TIMING

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

#### Code reference

*Clause 8 Schedule 15.3*

#### Code related audit information

*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

Hunet have created a new submission system and have sought John Candy's guidance in this. The new submission system was assessed by checking sample files from different revisions over multiple months.

#### Audit commentary

The check of the sample files confirmed that the correct aggregation factors were present.

#### 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

Aggregation of the AV080 was reviewed in **Section 13.1**. As part of these checks, I verified that the data provided for submission was correctly rounded.

#### Audit commentary

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

Aggregation of the AV080 was reviewed in **Section 13.1**. As part of these checks, I verified reporting of the HE proportion.

#### Audit commentary

The test files checked correctly records the proportion of HE.

#### Audit outcome

Compliant

## CONCLUSION

Clause 16A.11 requires that if a material change to a system or process is a change that is likely to affect the ability of the participant to comply with any relevant provision of the code, then a material change audit must be undertaken prior to the change taking place.

The audit was conducted in accordance with the relevant sections from the Guideline for Reconciliation Participant Audits version 7.1 to prove compliance.

Hunet decided to create a new submission system as too much critical knowledge of how the existing system was structured was unknown. They have addressed this by creating a new submission system and have sought John Candy Consulting's guidance with this. In this audit I have assessed the new submission system for compliance and I found compliance with all relevant clauses.

I recommend Hunet engage John Candy to peer review the first two months of submission files to confirm that the submission system works as expected once in production. With this confirmed a longer audit period could be considered for Hunet when their Reconciliation Participant audit is reviewed.



## PARTICIPANT RESPONSE

Hunet worked closely with John Candy for accurate data and calculation formula to be obtained in each scenario and the output in each scenario has already proven that they are compliant with the audit.

We have made good progress with our new submission system and our compliance, and we are pleased that our NHH volume with HE and FE consumption and ICP days per ICP have been correctly implemented. The submission files will also be monitored for the next two months through the peer review by John Candy to ensure that the new submission system works as expected in production. We consider that the controls in place are strong and are adequate to ensure that compliances are met.