

ELECTRICITY INDUSTRY PARTICIPATION CODE  
RECONCILIATION PARTICIPANT AUDIT REPORT



For

PAUA TO THE PEOPLE LIMITED

Prepared by: Rebecca Elliot

Date audit commenced: 3 April 2020

Date audit report completed: 8 May 2020

Audit report due date: 15 May 2020

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## EXECUTIVE SUMMARY

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

This audit identified some new issues and Paua have already made improvements to their system as a result of this audit.

### Registry Management and Switching

Paua's registry management processes are robust and the overall data accuracy was found to be high. There was an issue with the processing of NSP changes during the audit period which caused some ICPs to be settled to the incorrect NSP over a number of revisions due to human error. Paua are now clear on this and have updated their system so such changes are easily managed.

Switching continues to be undertaken directly in the registry. There were a number of switch breaches recorded and this was due to a misunderstanding of the switching requirements. I have shared the Veritek switching diagrams which sets out the switch timings. Paua understands these and plans to automate the switching process and understand that this will require a material change audit.

### Data Collection and Reconciliation

Paua continues to supply HHR AMI customers only, and relies on AMI reads provided by MEPS. Paua's initial submission data is usually highly accurate, because it is based on AMI data. Paua was developing a new system and a material change audit was in progress for this, but this is no longer being progressed. This audit found that some of that development had been deployed and was not working as expected, specifically the automated estimation process. Paua have removed this code and replaced it with their own to rectify this while this audit was undertaken. I have reviewed and confirmed that it is now working as expected. Paua understands that a material change should have been completed prior to deployment of any such changes and will undertake a material change prior to any further changes being made.

The last audit found that revision data was not being routinely submitted unless it was considered to be material. In this audit I found that revisions were still not routinely being carried out. Some corrections identified in the last audit were not submitted within the 14-month revision cycle and therefore these will not flow through to the market. Due to the small, mostly residential customer base the effect to the market is minimal. Paua has now added functionality that prompts the operator for the revision files required for each submission.

This audit identified 20 non-compliances and makes two recommendations. The audit risk rating is 34, which results in an indicative audit frequency of 12 months. I have considered this and Paua's responses and agree with this recommendation.

The matters raised are shown in the tables below:

## AUDIT SUMMARY

### NON-COMPLIANCES

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Material audit change request	1.11	16A.11	Material change audit not undertaken for system change that affected Paua's ability to comply with the code.	Strong	Low	1	Identified
Relevant information	2.1	10.6, 11.2, 15.2	<p>ICP 0000123086TRFBA had an incorrect inactive status date not corrected from the last audit.</p> <p>CS file content incorrect for one ICP.</p> <p>Four RR requests contained requested readings inconsistent with the HHR data.</p> <p>Some revision files were not provided within the 14-month revision period resulting in corrections not being settled in the market.</p> <p>Three ICPs submitted against the incorrect NSP.</p>	Moderate	Low	2	Identified
Provision of information	2.2	15.35	Information was not provided as required by the code to meet the revision cycle causing corrections to not be settled to the market.	Strong	Low	1	Identified
Changes to registry information	3.3	10 Schedule 11.1	Ten late status updates.	Moderate	Low	2	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Losing trader response to switch request and event dates - standard switch	4.2	3 and 4 Schedule 11.3	Six late AN files.	Moderate	Low	2	Investigating
Losing trader must provide final information - standard switch	4.3	5 Schedule 11.3	58 late CS files. CS file content incorrect for one ICP.	Moderate	Low	2	Investigating
Retailers must use same reading - standard switch	4.4	6(1) and 6A Schedule 11.3	One late RR file.	Strong	Low	1	Cleared
Losing trader provides information - switch move	4.8	10(1) Schedule 11.3	Two incorrect AN codes send – AD was sent when the PD code was more accurate.  No AN file sent for 175 AN switches.	Moderate	Low	2	Investigating
Losing trader must provide final information - switch move	4.10	11 Schedule 11.3	CS file content incorrect for three ICPs (one ICP had both the incorrect average daily consumption and an incorrect estimate) checked.	Moderate	Low	2	Identified
Gaining trader changes to switch meter reading - switch move	4.11	12 Schedule 11.3	Four RR requests contained requested readings inconsistent with the HHR data.	Moderate	Low	2	Identified
Withdrawal of switch requests	4.15	17 and 18 Schedule 11.3	One incorrect NW code.  One late withdrawal acknowledgement.	Strong	Low	1	Investigating

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Metering information	4.16	21 Schedule 11.3	Two CS files with incorrect estimated reads.  Four incorrect RR reads were provided.	Moderate	Low	2	Identified
Correction of HHR metering information	8.2	19(2) of Schedule 15.2	Corrections not materially similar to the period with missing data.	Strong	Low	1	Cleared
HHR Estimation	9.4	15 of Schedule 15.2	Estimations did not meet reasonable endeavours.	Strong	Low	1	Cleared
ICP days	11.2	15.6	Inaccurate ICP days were reported for a small number of ICPs due to NSP changes not being processed correctly.	Moderate	Low	2	Identified
HHR aggregates information provision to the reconciliation manager	11.4	15.8	The HHR aggregates file does not contain electricity supplied information.  Three ICPs reconciled to the incorrect NSP.  Some submission inaccuracies were identified which have not been submitted within the 14-month revision cycle resulting in corrections not being settled to the market.	Moderate	Low	2	Identified



Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Creation of submission information	12.2	15.4	One late submission file was provided in June 2019 for May 2019 Ri.  Revisions not routinely being submitted.  Some submission inaccuracies were identified which have not been submitted within the 14-month revision cycle resulting in corrections not being settled to the market.	Moderate	Low	2	Identified
Allocation of submission information	12.3	15.5	Three ICPs submitted against the incorrect NSP.	Moderate	Low	2	Identified
Accuracy of submission information	12.7	15.12	Some late revision files were provided.  Some revision files were not provided within the 14-month revision period resulting in corrections not being settled in the market.  Some incorrect submission data was provided.	Moderate	Low	2	Identified
Provision of submission information to the RM	13.1	8 Schedule 15.3	Three ICPs reconciled to the incorrect NSP.	Moderate	Low	2	Identified
Future Risk Rating						34	

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

## RECOMMENDATIONS

Subject	Section	Description	Recommendation
Relevant information	2.1	Unmetered load changes	Include a check for unmetered load recorded by the Distributor.
Calculation of ICP days	11.2	ICP Missing	Review ICP missing report regularly.

## ISSUES

Subject	Section	Description	Issue
Nil		Nil	

## 1. ADMINISTRATIVE

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

#### Code reference

*Section 11 of Electricity Industry Act 2010.*

#### Code related audit information

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

#### Audit observation

Current code exemptions were reviewed on the Electricity Authority website.

#### Audit commentary

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

### 1.2. Structure of Organisation

The structure of the organisation was provided.

### 1.3. Persons involved in this audit

Auditor:

Rebecca Elliot

**Veritek Limited**

**Electricity Authority Approved Auditor**

Paua personnel assisting in this audit were:

Name	Title
Mark Hughes	Managing Director

### 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

Any agents used by Paua were identified and their agent reports assessed as a part of this audit.

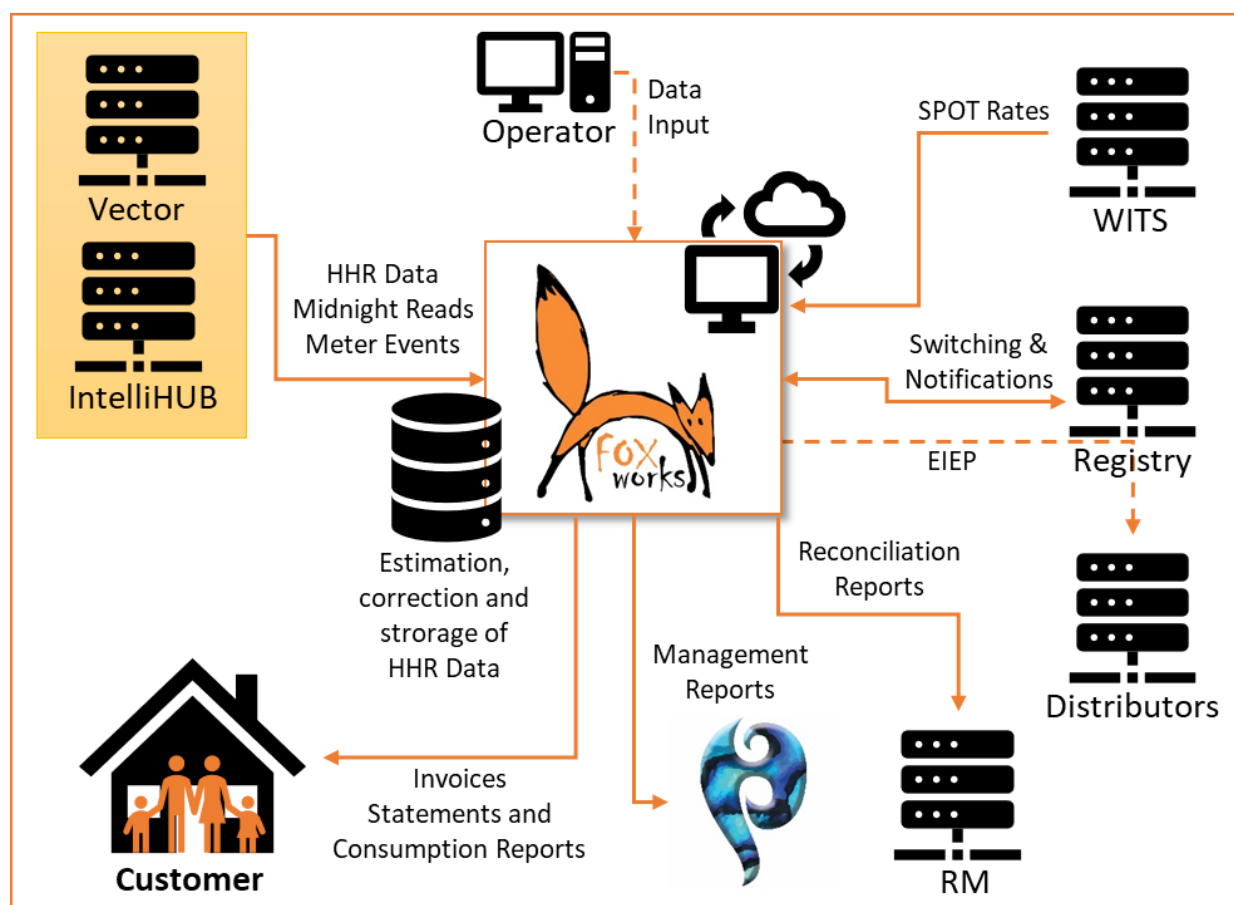
### Audit commentary

Paua receives HHR data from AMS (NGCM) and IntelliHUB Limited (MTRX) as MEPS. MTRX provides estimates where data is missing and Paua will use these. This data is provided as an agent to Paua, and the IntelliHUB Limited agent report will be submitted with this audit.

#### 1.5. Hardware and Software

Paua utilises the following software:

Task	Software	Notes
Security	Norton	Remote server has full security suite protection.
SFTP/FTP	winSCP	
Disaster Recovery	OneDrive	Simultaneous back up of the NAS (RAID1), PC and laptop. Weekly backup to OneDrive.
CRM/Billing	Bespoke .Net Application frontend to SQL Server customer usage tables.	Back up to the Cloud occurs daily.



## 1.6. Breaches or Breach Allegations

There was one breach allegation recorded by the Electricity Authority between October 2018 and March 2020:

Reference	Code	Summary	Severity	Status	Result
1910GIVE1	Part 15 clause 15.4(1)	Paua to the People Limited (GIVE) failed to submit data to the reconciliation manager by 16:00 on 7th June 2019 (BD) 4 in breach of Part 15.4 (1) of the Code. GIVE didn't realise their submission didn't go through on the file checker on BD4.	low	closed	early closure

This is discussed in **section 12.2**.

## 1.7. ICP Data

Paua provided a registry list as at 06/04/20. The active ICPs are summarised by meter category in the table below:

Metering Category	Number of ICPs (Apr 2020)	Number of ICPs (Oct 2018)	Number of ICPs (Jan 2018)
1	577	1,205	920
2	-	-	-
3	-	-	-
4	-	-	-
5	-	-	-
9	-	-	-

Status	Number of ICPs (Apr 2020)	Number of ICPs (Oct 2018)	Number of ICPs (Jan 2018)
Active (2,0)	576	1,205	920
Inactive – new connection in progress (1,12)	-	-	-
Inactive – electrically disconnected vacant property (1,4)	-	2	1
Inactive – electrically disconnected remotely by AMI meter (1,7)	1	6	4
Inactive – electrically disconnected at pole fuse (1,8)	-	-	1
Inactive – electrically disconnected due to meter disconnected (1,9)	-	-	-
Inactive – electrically disconnected at meter box fuse (1,10)	-	-	-
Inactive – electrically disconnected at meter box switch (1,11)	-	-	1
Inactive – electrically disconnected ready for decommissioning (1,6)	-	-	-
Inactive – reconciled elsewhere (1,5)	-	-	-
Decommissioned (3)	-	-	-

#### 1.8. Authorisation Received

An authorisation email was provided.

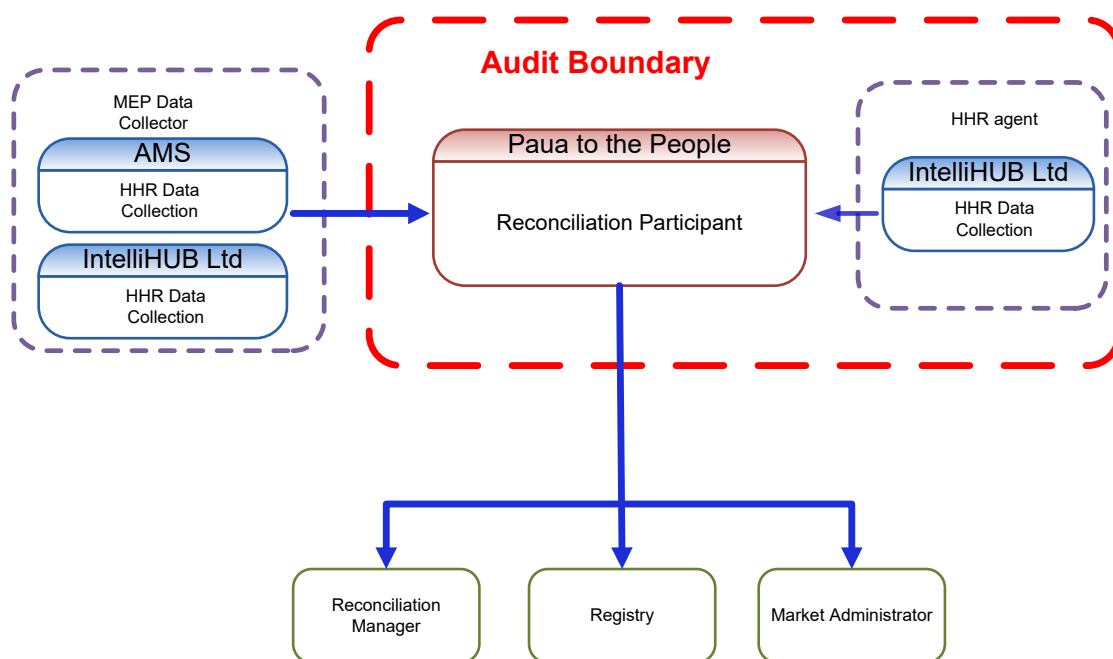
## 1.9. Scope of Audit

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

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

The audit was carried out remotely during the Covid-19 pandemic on 29<sup>th</sup>-30<sup>th</sup> April, 2020.

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



The table below shows the tasks under clause 15.38 of part 15 for which Paea requires certification. AMS (NGCM) and IntelliHUB Ltd (MTRX) provides AMI data as an MEP. IntelliHUB Ltd (MTRX) provides estimated data as an agent to Paea. The IntelliHUB Ltd (MTRX) is expected to be submitted as part of this audit.

Tasks Requiring Certification Under Clause 15.38(1) of Part 15	Agents Involved in Performance of Tasks	MEPs Providing AMI data
(a) - Maintaining registry information and performing customer and embedded generator switching		
(b) – Gathering and storing raw meter data		AMS – HHR (AMI) MTRX- HHR (AMI)
(c)(iii) - Creation and management of volume information	MTRX- estimation of missing HHR data	AMS – HHR (AMI) MTRX- HHR (AMI)
(d) – Calculation of ICP days		

Tasks Requiring Certification Under Clause 15.38(1) of Part 15	Agents Involved in Performance of Tasks	MEPs Providing AMI data
(da) - delivery of electricity supplied information under clause 15.7		
(db) - delivery of information from retailer and direct purchaser half hourly metered ICPs under clause 15.8		
(e) – Provision of submission information for reconciliation		

#### 1.10. Summary of previous audit

Paua provided a copy of their previous audit conducted in January 2019 by Tara Gannon of Veritek Limited. The summary tables below show the status of the non-compliances and recommendations raised in the previous audit. Further comment is made in the relevant sections of this report.

#### Table of Non-compliance

Subject	Section	Clause	Non compliance	Status
Relevant information	2.1	10.6, 11.2, 15.2	ICP 0000123086TRFBA had an incorrect inactive status date applied.	Still existing
Audit trails	2.4	21 Schedule 15.2	System audit trails are not compliant.	Cleared
Changes to registry information	3.3	10 Schedule 11.1	Nine late status updates.	Still existing
Management of “inactive” status	3.9	19 Schedule 11.1	ICP 0000123086TRFBA had an incorrect inactive status date applied.	Still existing but recorded in <b>section 2.1</b>
Losing trader response to switch request and event dates - standard switch	4.2	3 and 4 Schedule 11.3	The “AD” (advanced metering) AN response code was applied for one ICP without advanced metering installed.	Still existing
Losing trader must provide final information - standard switch	4.3	5 Schedule 11.3	Nine late CS files.	Still existing



Subject	Section	Clause	Non compliance	Status
Retailers must use same reading - standard switch	4.4	6(1) and 6A Schedule 11.3	One late AC file. The agreed switch reading was not applied for two transfer switches.	Still existing
Losing trader provides information - switch move	4.8	10(1) Schedule 11.3	Switch event dates were earlier than the requested date for one switch.	Still existing
Gaining trader changes to switch meter reading - switch move	4.11	12 Schedule 11.3	The agreed switch read was not applied for one switch move. One RR request contained requested readings inconsistent with the HHR data.	Still existing
Withdrawal of switch requests	4.15	17 and 18 Schedule 11.3	Four late withdrawal acknowledgements.	Still existing
Metering information	4.16	21 Schedule 11.3	One incorrect RR read was provided.	Still existing
Electricity supplied information provision to the reconciliation manager	11.3	15.7	The AV120 report does not consistently reflect the quantity billed for the period.	Cleared
HHR aggregates information provision to the reconciliation manager	11.4	15.8	The HHR aggregates file does not contain electricity supplied information. Some submission inaccuracies were identified.	Still existing
Creation of submission information	12.2	15.4	Some late revision files were provided. Revisions are only provided where there is a material change to submission data.	Still existing
Accuracy of submission information	12.7	15.12	Some late revision files were provided. Revisions are only provided where there is a material change to submission data. Some incorrect submission data was provided.	Still existing

**Table of Recommendations**

Subject	Section	Clause	Recommendation	Status
Relevant information	2.1	Distributed generation changes	Include a check for installation type B, generation capacity ≠ 0 and fuel type ≠ blank in the registry validation, to identify ICPs which may have distributed generation added.	Adopted
Monitoring of new and ready ICPs	3.10	Monitoring of new and ready ICPs	A Registry List (type P) with proposed trader = GIVE and status = 000 and 999 should be run at least quarterly to identify ICPs which are at new or ready status. Any ICPs on the list should be followed up with the distributor as it is likely GIVE would have been selected in error.	Not required as no new connections are undertaken
Retailers must use same reading - standard switch	4.4	Replacement of agreed switch reads	Ensure that the agreed switch read is always applied, by not replacing switch reads with AMI data, unless an RR to change the switch read to match the AMI read is accepted.	Adopted
Electronic meter readings and estimated readings	9.6	Validation of HHR data	I recommend that consumption validations should occur at ICP level to better identify potential issues.	Adopted

#### 1.11. Material Change audit requirement (clause 16A.11)

##### Code reference

Clause 16A.11

##### Code related audit information

*Audit required if participant makes material change*

*(1) If there is a material change to any of a participant's systems or processes that are the subject of regular audits under clause 10.17A, 11.8B, 11.10, 15.37A or 15.37B, the participant must arrange for an additional audit, which must be completed in accordance with this Part no later than 5 business days before the change is implemented.*

*(2) For the purposes of sub-clause (1), 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 this Code.*

### Audit commentary

Paua was developing a new system and a material change audit was in progress for this, but this is no longer being progressed. This audit found that some of the development had been deployed and was not working as expected, specifically the automated estimation process. Paua have removed this code and replaced it with their own to rectify this while this audit was undertaken. I have reviewed this and confirm that it is now working as expected. Paua now understands that the material change should have been completed prior to deployment of such changes and will undertake a material change prior to any further changes being made.

### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 1.11 With: Clause 16A.11  From: 01-Sept-19 To: 30-Apr-20	Material change audit not undertaken for system change that affected Paua's ability to comply with the code.  Potential impact: Low  Actual impact: Low  Audit history: None  Controls: Strong  Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
Low	Controls are rated as strong as Paua is now clear on what requires a material change and that system changes cannot go into production prior to this.  The impact is assessed to be low, as updated data will be provided through the revision process prior by revision 14.		
Actions taken to resolve the issue		Completion date	Remedial action status
Working with Veritek to ratify system changes to date		1/5/2020	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
We have agreed with Veritek to let them know what we are doing and rely on their advice for what requires an major change audit		1/5/2020	

## 2. OPERATIONAL INFRASTRUCTURE

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

#### Code reference

Clause 10.6, 11.2, 15.2

#### Code related audit information

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

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

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

#### Audit observation

The process to find and correct incorrect information was examined. The registry validation process was examined in detail in relation to the achievement of this requirement. The registry list file and AC020 report were examined to determine compliance.

#### Audit commentary

Paua downloads an ICP List monthly and Foxworks creates a report of any exceptions. This compares ICP status, network, POC, loss factor, MEP, multiplier, distributed generation and indicators of unmetered load to the data recorded in Foxworks. Any discrepancies are investigated and corrected. Paua also completes a weekly status check. This was modified in July 2019 and identified two status discrepancies that were then corrected. The late status updates are discussed in **section 3.3**. I recommend that the check for unmetered load include the distributor's unmetered load field as well as the trader's unmetered load field. This will ensure that if any unmetered load is added by the Distributor this will be identified.

Description	Recommendation	Audited party comment	Remedial action
Unmetered load changes	Include a check for unmetered load recorded by the Distributor.	Has been completed.	Adopted

The registry list was reviewed, and found:

Issue	Oct 2018 Qty	Jan 2018 Qty	Comments
Blank ANZSIC codes	0	0	Compliant.
ANZSIC "T99" series	0	0	Compliant.
UML load = zero	0	0	Compliant, no unmetered load was identified.
Incorrect UML load	0	0	Compliant, no unmetered load was identified.
Shared unmetered load incorrect	0	0	Compliant, no unmetered load was identified.
ICPs with Distributor unmetered load populated but retail unmetered load is blank and UML flag = N	0	0	Compliant, no unmetered load was identified.
No MEP recorded or nominated and UML= "N"	0	0	Compliant, all ICPs have an MEP.
Active Category 9 and UML "N"	0	0	Compliant, all ICPs have metering category 1.
Incorrect profile	0	0	Compliant, all ICPs have HHR profile.
Incorrect submission type	0	0	Compliant, all ICPs have HHR submission type.
Incorrect status or status date	1	1	2019 audit finding: one ICP had an incorrect inactive status date applied. This has not been corrected during the audit period and is now beyond the revision cycle.

#### Data Corrections:

I identified one CS file where the estimated read in the CS file did not match the read in the CS file. This has been corrected since the audit and now match. This is recorded as non-compliance below and is discussed in **section 4.3, 4.16 and 12.7**.

There were four RR files which contained incorrect readings. The correct readings were used in submission. This is recorded as non-compliance below and is discussed in **section 4.11**.

#### Submission inaccuracies

Examination of corrections found that that automated estimation process was inserting a flat interval pattern which did not match the midnight read in all instances. Pua have replaced this coding and the estimation process now correctly considers the surrounding data and similar periods.

This also affected the HHR estimations detailed in **section 9.4**. I checked three examples of corrections in Foxworks post the coding change and confirmed that it is working as expected. All estimated data matched to the midnight reads and was within the 10% percentage threshold.

The last audit found that revision data was not being routinely submitted unless it was considered to be material. In this audit I found that revisions are still not routinely being carried out. Some corrections identified in the last audit were not submitted within the 14-month revision cycle and therefore these will not flow through to the market. This is recorded as non-compliance below and in **section 11.4, 12.2 and 12.7**. Due to the small mostly residential customer base the effect to the market is minimal. Paua has now added functionality that prompts the operator for the revision files required for each submission.

As described in **sections 11.2, 11.4, 12.3 and 12.7**, NSP changes were not always managed correctly resulting in volumes being reconciled to the incorrect NSP. I note they are all within the same balancing area so the impact on submission is minimal. I recommend in **section 11.2**, that the ICP missing report is used to ensure that all expected changes have been captured.

#### **Audit outcome**

Non-compliant

Non-compliance	Description		
<p>Audit Ref: 2.1</p> <p>With: Clause 10.6, 11.2, 15.2</p> <p>From: 05-Jun-18</p> <p>To: 06-Apr-20</p>	<p>ICP 0000123086TRFBA had an incorrect inactive status date applied not corrected from the last audit.</p> <p>CS file content incorrect for one ICP.</p> <p>Four RR requests contained requested readings inconsistent with the HHR data.</p> <p>Some revision files were not provided within the 14-month revision period resulting in corrections not being settled in the market.</p> <p>Three ICPs submitted against the incorrect NSP.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: None</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>		
Audit risk rating	Rationale for audit risk rating		
<p><b>Low</b></p>	<p>Controls are rated as moderate as they will mitigate risk most of the time but there is room for errors.</p> <p>The audit risk rating is low as data discrepancies found have a minor impact on reconciliation.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>We have updated our HHR dataset.</p> <p>Status changes are now done as soon as notifications are received from the MEP regardless of whether the customer reconnects.</p>		1/5/2020	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
<p>Our system;</p> <ol style="list-style-type: none"> <li>1. Checks the ICP for attribute changes monthly. The above relate to changes before adopting the new system</li> <li>2. Status change process above has stopped incorrect status changes</li> </ol> <p>Prompts the operator to supply reports to the Reconciliation Managers schedule.</p>		1/5/2020	

## 2.2. Provision of information (Clause 15.35)

### Code reference

Clause 15.35

### Code related audit information

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

### Audit observation

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

### Audit commentary

The lack of revisions submitted within the 14-month revision period is recorded as non-compliance. This is discussed further in **sections 11.4** and **12.7**.

### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 2.2 With: Clause 15.35  From: 05-Jun-18 To: 06-Apr-20	Information was not provided as required by the code to meet the revision cycle causing corrections to not be settled to the market.  Potential impact: Low  Actual impact: Low  Audit history: None  Controls: Strong  Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
Low	Controls are rated as strong as Paua has now added functionality that prompts the operator for the revision files required for each submission.  The audit risk rating is low corrections not processed will have a very minor impact in the market .		
Actions taken to resolve the issue		Completion date	Remedial action status
We have updated our HHR dataset.		1/5/2020	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Our new system prompts the operator to supply reports to the Reconciliation Managers schedule.  We now submit reports more regularly.		1/5/2020	



## 2.3. Data transmission (Clause 20 Schedule 15.2)

### Code reference

*Clause 20 Schedule 15.2*

### Code related audit information

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

### Audit observation

HHR AMI data is provided by AMS & MTRX via SFTP.

To confirm the process, I traced volumes for one month for five HHR ICPs from the source data to Paua's system and the HHR aggregates submissions.

### Audit commentary

Read and volume data is received from AMS & MTRX via SFTP.

I traced volumes for October 2019 for three AMS and two MTRX ICPs from the source data to Paua's system and the HHR aggregates submission. The volumes matched the source data.

### Audit outcome

Compliant

## 2.4. Audit trails (Clause 21 Schedule 15.2)

### Code reference

*Clause 21 Schedule 15.2*

### Code related audit information

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

*The audit trail must include details of information:*

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

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

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

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

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

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

### Audit observation

Audit trails were discussed and reviewed.

### Audit commentary

Audit trails were reviewed and the logs include the activity identifier, date and time, and an operator identifier.

### Audit outcome

Compliant

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

### Code reference

*Clause 10.4*

### Code related audit information

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

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

### Audit observation

I reviewed Paua's current terms and conditions.

### Audit commentary

Paua's Terms and Conditions include consent to access for authorised parties for the duration of the contract.

### Audit outcome

Compliant

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

### Code reference

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

### Code related audit information

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

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

*The trader must use its best endeavours to provide access:*

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

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

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

#### **Audit observation**

I reviewed Paua's current terms and conditions.

#### **Audit commentary**

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

#### **Audit outcome**

Compliant

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

#### **Code reference**

*Clause 10.35(1)&(2)*

#### **Code related audit information**

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

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

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

#### **Audit observation**

The physical meter location point is not specifically mentioned in the terms and conditions, but the existing practices in the electricity industry achieve compliance.

Review of a registry list as at 06/04/20 confirmed that Paua do not supply any ICPs with metering category 2 or above.

#### **Audit commentary**

Paua only supplies ICPs with metering category 1, and does not deal with any installations with loss compensation.

#### **Audit outcome**

Compliant

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

### Code reference

Clause 11.15B

### Code related audit information

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

- *the Authority to assign the rights and obligations of the trader under the contract to another trader if the trader commits an event of default under paragraph (a) or (b) or (f) or (h) of clause 14.41 (clause 11.15B(1)(a)); and*
- *the terms of the assigned contract to be amended on such an assignment to—*
- *the standard terms that the recipient trader would normally have offered to the customer immediately before the event of default occurred (clause 11.15B(1)(b)(i)); or*
- *such other terms that are more advantageous to the customer than the standard terms, as the recipient trader and the Authority agree (clause 11.15B(1)(b)(ii); and*
- *the terms of the assigned contract to be amended on such an assignment to include a minimum term in respect of which the customer must pay an amount for cancelling the contract before the expiry of the minimum term (clause 11.15B(1)(c)); and*
- *the trader to provide information about the customer to the Authority and for the Authority to provide the information to another trader if required under Schedule 11.5 (clause 11.15B(1)(d)); and*
- *the trader to assign the rights and obligations of the trader to another trader (clause 11.15B(1)(e)).*

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

### Audit observation

I reviewed Paua's current terms and conditions.

### Audit commentary

Paua's terms and conditions contain the appropriate clauses to achieve compliance with this requirement.

### Audit outcome

Compliant

## 2.9. Connection of an ICP (Clause 10.32)

### Code reference

Clause 10.32

### Code related audit information

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

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

### Audit observation

The new connection process was discussed.

The registry list as at 6/04/2020, the event detail report from 04/10/18 to 06/04/20 and the audit compliance reports for the audit period were examined to determine whether any new connections were completed during the audit period.

### Audit commentary

Review of the files confirmed that Paua has not completed any new connections during the audit period.

Paua does not intend to handle new connections, and ICPs must be connected before they will be accepted by Paua.

### Audit outcome

Compliant

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

### Code reference

*Clause 10.33(1)*

### Code related audit information

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

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

### Audit observation

The new connection process was discussed.

The registry list as at 6/04/2020, the event detail report from 04/10/18 to 06/04/20 and the audit compliance reports for the audit period were examined to determine whether any new connections were completed during the audit period.

### Audit commentary

No new connections were completed during the audit period, and no temporary connections were identified.

### Audit outcome

Compliant

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

### Code reference

*Clause 10.33A(1)*

### Code related audit information

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

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

### Audit observation

The new connection and reconnection processes were discussed.

The registry list as at 6/04/2020, the event detail report from 04/10/18 to 06/04/20 and the audit compliance reports for the audit period were examined to determine whether any new connections or reconnections were completed during the audit period.

### Audit commentary

No new connections were completed during the audit period.

The audit compliance reports confirmed that all reconnected ICPs had certified meters installed and Paua listed as the responsible retailer at the time of reconnection.

No bridged meters were identified during the audit period.

### Audit outcome

Compliant

## 2.12. Arrangements for line function services (Clause 11.16)

### Code reference

*Clause 11.16*

### Code related audit information

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

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

### Audit observation

The process to ensure an arrangement is in place before trading commences on a network was examined, along with the application process.

The registry list as at 03/10/18 was examined to confirm the networks Paua trades on.

#### **Audit commentary**

Paua only trades on the Wellington Electricity network, and has a Use of System Agreement with Wellington Electricity.

Before an application is accepted, ICPs are checked on the registry to confirm the network is Wellington Electricity.

#### **Audit outcome**

Compliant

### **2.13. Arrangements for metering equipment provision (Clause 10.36)**

#### **Code reference**

*Clause 10.36*

#### **Code related audit information**

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

#### **Audit observation**

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

The registry list as at 06/04/20 was examined to confirm the MEPs for Paua's ICPs.

#### **Audit commentary**

All current Paua ICPs have either AMS (NGCM) meters (573 ICPs) or IntelliHUB Limited (MTRX) meters (four ICPs). Paua demonstrated that an arrangement is in place with both MEPs. Before an application is accepted, ICPs are checked on the registry to confirm the MEP is either NGCM or MTRX.

#### **Audit outcome**

Compliant

### 3. MAINTAINING REGISTRY INFORMATION

#### 3.1. Obtaining ICP identifiers (Clause 11.3)

##### Code reference

Clause 11.3

##### Code related audit information

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

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

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

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

##### Audit observation

The new connection process was discussed.

The registry list as at 06/04/20 the event detail report from 04/10/18 to 06/04/20 and the audit compliance reports for the audit period were examined to determine whether any new connections were completed during the audit period.

##### Audit commentary

Paua does not intend to handle new connections. Review of the files confirmed that Paua has not completed any new connections during the audit period.

##### Audit outcome

Compliant

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

##### Code reference

Clause 11.7(2)

##### Code related audit information

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



#### Audit observation

The new connection, disconnection, reconnection, MEP nomination, and switching processes were examined. This clause links directly to **sections 3.3** below, where findings on the timeliness of updates are recorded.

The audit compliance reports for the audit period were analysed in relation to updating of the registry.

#### Audit commentary

Paua's processes are designed to ensure that trader information is populated as required by this clause.

#### Audit outcome

Compliant

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

#### Code reference

*Clause 10 Schedule 11.1*

#### Code related audit information

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

#### Audit observation

The process to manage status changes is discussed in detail in **sections 3.8** and **3.9**. In this section I have examined audit compliance reports for the audit period to confirm the timeliness of status and trader registry information updates.

All late updates were reviewed to determine why they were delayed.

### Audit commentary

The audit compliance report was examined to confirm whether the registry is notified within five business days when information referred to in clause 9 of schedule 11.1 changes.

Status	Review period end	ICPs notified greater than 5 days	Percentage on time	Average Business Days between Status Event and Status Input Dates
Active	2017	-	100.0%	8.1
	Jan 2018	3	72.7%	5.4
	Oct 2018	3	75.0%	4
	<b>Apr 2020</b>	<b>6</b>	<b>55.6%</b>	<b>38.7</b>
Inactive	Jan 2018	2	90%	Not able to calculate due to table format change from last audit.
	Oct 2018	6	57.1%	Not able to calculate due to table format change from last audit.
	<b>Apr 2020</b>	<b>4</b>	<b>75.0%%</b>	<b>4.31</b>

Paua has made no trader updates during the audit period.

All ten late status changes were reviewed and found:

- eight were updated late due to human error, and
- two were identified via the registry discrepancy reporting, which is run monthly and therefore the updates were late. As detailed in **section 2.1**, Paua made some changes to the weekly discrepancy report in July 2019 which then identified these ICPs.

The late updates are recorded as non-compliance below.

No MEP nominations, or trader updates other than NT updates occurred during the period. This was confirmed by checking the audit compliance reports and the event detail report for the audit period.

### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 3.3 With: Clause 10 Schedule 11.1  From: 12-Jul-18 To: 24-Jul-19	Ten late status updates.  Potential impact: Low  Actual impact: Low  Audit history: Three times  Controls: Moderate  Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	The controls are adequate to ensure that the registry is updated on time most of the time, but there is room for improvement.  The risk is low as a small number of updates were affected.		
Actions taken to resolve the issue		Completion date	Remedial action status
Status changes are now done as soon as notifications are received from the MEP regardless of whether the customer reconnects.		1/5/2020	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Status change process above has stopped incorrect status changes		1/5/2020	

### 3.4. Trader responsibility for an ICP (Clause 11.18)

#### Code reference

Clause 11.18

#### Code related audit information

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

*A trader ceases to be responsible for an ICP if:*

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

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

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

#### **Audit observation**

##### **Retailers Responsibility to Nominate and Record MEP in the Registry**

Paua does not complete new connections. The registry list as at 06/04/20 and audit compliance reports for the audit period were examined to identify:

- any active ICPs that do not have an MEP recorded, and
- all MEP nominations.

##### **ICP Decommissioning**

The process for the decommissioning of ICPs was examined. Review of the event detail report for 04/10/18 to 06/04/20 confirmed that no ICPs were decommissioned during the audit period.

#### **Audit commentary**

##### **Retailers Responsibility to Nominate and Record MEP in the Registry**

Review of the registry list and audit compliance reports confirmed all active ICPs have a valid MEP recorded in the registry, and no MEP nominations were made.

##### **ICP Decommissioning**

Review of the event detail report confirmed that no ICPs were decommissioned during the audit period. Paua is aware of their responsibility to notify the MEP where an ICP is decommissioned, and to obtain a final reading.

#### **Audit outcome**

Compliant

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

#### Code reference

Clause 9 Schedule 11.1

#### Code related audit information

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

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

*The trader must provide information specified in (a) to (j) above within 5 business days of trading (clause 9(2)).*

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

#### Audit observation

The new connection process was discussed.

The registry list as at 6/04/2020 event detail report from 04/10/18 to 06/04/20 and the audit compliance reports for the audit period were examined to determine whether any new connections were completed during the audit period.

#### Audit commentary

Review of the reports confirmed that Paua has not completed any new connections during the audit period.

Paua does not intend to handle new connections, and ICPs must be connected before they will be accepted by Paua.

#### Audit outcome

Compliant

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

#### Code reference

*Clause 9 (1(k) of Schedule 11.1*

#### Code related audit information

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

#### Audit observation

The process to capture and manage ANZSIC codes was examined. A registry list as at 03/10/18 was reviewed to check ANZSIC codes were valid.

I checked a diverse sample of ten active ICPs (including all non-domestic ANZSIC codes) against Google street view data to confirm the correct ANZSIC code.

#### Audit commentary

ANZSIC codes are set based on information provided on the customer application.

Review of the registry list found all ICPs had a valid ANZSIC code. The sample of ten ANZSIC codes checked were found to be correct.

#### Audit outcome

Compliant

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

#### Code reference

*Clause 9(1)(f) of Schedule 11.1*

#### Code related audit information

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

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

#### Audit observation

The process to manage unmetered load was examined.

The registry list for 04/10/18 to 06/04/20 was examined to identify any ICPs where:

- unmetered load is identified by the Distributor, but none is recorded by Paua, and
- unmetered load is present, but Paua's unmetered load figure doesn't match with the Distributor's figure.

#### Audit commentary

Paua only accepts applications from customers who do not have unmetered load connected. Review of the registry list confirmed that no unmetered load is recorded by the distributor or trader for any Paua ICP. I have recommended in **section 2.1**, that a check against the Distributor unmetered load details is added to the discrepancy reporting.

#### Audit outcome

Compliant

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

#### Code reference

Clause 17 Schedule 11.1

#### Code related audit information

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

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

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

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

#### Audit observation

The process for status changes to “active” was discussed.

The event detail report for 04/10/18 to 06/04/20 was reviewed to identify all status changes to “active” during the audit period. A typical sample of six reconnected ICPs were checked using the typical characteristics methodology.

Processes to ensure there is only one active party per ICP, and that all active ICPs have an MEP were confirmed.

The findings in relation to the timeliness of updates to registry is recorded in **section 3.3**.

#### Audit commentary

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

Status changes are processed manually on the registry once paperwork is received. Weekly and monthly status matches between the registry and Paua’s system are completed as described in **section 2.1**. At month end, any ICPs where status changes are expected are checked to confirm whether their current status is still valid.

Paua has not completed any new connections. Nine ICPs had status changes to “active” during the audit period; all had final certified metering installations in place. I reviewed the status codes and reconnection dates for the sample of six reconnections, and confirmed that they had been applied appropriately.

Late registry updates to active are recorded as a non-compliance in **section 3.3**.

#### Audit outcome

Compliant

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

#### Code reference

*Clause 19 Schedule 11.1*

#### Code related audit information

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

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

#### Audit observation

The process for status changes to inactive was discussed.

The event detail report for 04/10/18 to 06/04/20 was reviewed to identify all status changes to inactive during the audit period.

A typical sample of four ICPs covering all inactive statuses applied during the audit period were checked using the typical characteristics methodology.

The findings in relation to the timeliness of updates to registry are recorded in **section 3.3**.

#### Audit commentary

Status changes are processed manually on the registry once paperwork is received. Weekly and monthly status matches between the registry and Paua’s system are completed as described in **section 2.1**. At month end, any ICPs where status changes are expected are checked to confirm whether their current status is still valid.

24 ICPs were disconnected during the audit period. I reviewed the reason codes and disconnection dates for the sample and found that they had been applied appropriately.

I checked the correction to ICP 0000123086TRFBA that was identified in the last audit as disconnected on 05/06/18 but was disconnected on 11/06/18 and found this has not been corrected. This is recorded as non-compliance in **section 2.1**, as it relates to an earlier audit period.

Late registry updates are recorded as a non-compliance in **section 3.3**.

#### Audit outcome

Compliant

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

#### Code reference

*Clause 15 Schedule 11.1*

#### Code related audit information

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



### **Audit observation**

Whilst this is a Distributor's code obligation, I investigated what process is in place to manage and respond to requests for information on ICPs at "new" or "ready" status, and how ICPs at "new" or "ready" status are monitored.

A registry list for 03/10/2018 to 06/04/2020 with Paua as the proposed trader and "new" or "ready" status was reviewed, to identify any ICPs at "new" or "ready" status for more than two years.

### **Audit commentary**

Review of the registry list confirmed that no ICPs have had "new" or "ready" status.

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

### **Audit outcome**

Compliant

## 4. PERFORMING CUSTOMER AND EMBEDDED GENERATOR SWITCHING

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

#### Code reference

*Clause 2 Schedule 11.3*

#### Code related audit information

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

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

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

#### Audit observation

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

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

#### Audit commentary

All switching is done manually on the registry. Paua are planning to automate this and intend to undertake a material change prior to the changes being deployed. Paua's processes are compliant with the requirements of Section 36M of the Fair Trading Act 1986. NT files are sent as soon as all pre-conditions are met, and the withdrawal process is used if the customer changes their mind.

Switch type is selected based on information provided by the customer on application. The customer is asked if they have recently moved into the property and their move in date as part of the application process. If they have not recently moved in, a transfer switch is requested.

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

#### Audit outcome

Compliant

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

##### Code reference

*Clauses 3 and 4 Schedule 11.3*

##### Code related audit information

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

- *provide acknowledgement of the switch request by (clause 3(a) of Schedule 11.3):*
- *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 may disregard every event date established by the losing trader for an ICP for which when the losing trader received notice from the registry manager under clause 22(a) the losing trader had been responsible for less than 2 months.*

##### Audit observation

An event detail report for 04/10/18 to 06/04/20 was reviewed to:

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

All AN response codes were reviewed to determine whether the codes had been correctly applied.

The switch breach report was examined for the audit period.

##### Audit commentary

All switching is done manually on the registry. Paua are planning to automate this and intend to undertake a material change prior to the changes being deployed.

##### AN timeliness

The switch breach report recorded 61 late AN files for transfer switches. These were checked and found ten had an AN sent and the remaining 51 ICPs had no AN sent. The code does not require an AN to be sent but if none is sent then the CS file must be sent within three business days of the NT being received. Paua did not realise this and thought that an AN or CS was expected to be sent within five business days of the NT receipt. They now have the Veritek switching diagrams and understand the requirements. The timeliness of CS files is discussed in **section 4.3**. The ten ICPs that had an AN sent were analysed and found six to be late due to the misunderstanding of the code. This is recorded as non-compliance below.

##### AN content

Event dates set by the losing trader must be no more than 10 business days after receipt of an NT file. Over a 12 month period 50% of event dates must be within five business days. The event detail report was examined; there were no ICPs with switch dates greater than 10 business days, and 97.8% of switches had a proposed event date within five business days.

Total transfer switches	Total over 10 business days	Total within 10 business days	Total within 5 business days	% within 5 business days
543	0	543	531	97.8%

All AN files were checked and confirmed to have the correct response code of AD (advanced metering).

#### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 4.2 With: Clauses 3 and 4 Schedule 11.3  From: 04-Mar-19 To: 11-Jul-19	Six late AN files. Potential impact: Low Actual impact: Low Audit history: Three times Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	Controls are rated as moderate. The process is manual and will mitigate risk most of the time but there is room for errors to occur.  The audit risk rating is low as five out of the six late AN files were one day late. This will have no material impact on other participants.		
Actions taken to resolve the issue		Completion date	Remedial action status
Systems development to try to automate as the Switch Breach report is unhelpful in this regard.		8/2020	Investigating
Preventative actions taken to ensure no further issues will occur		Completion date	
We are looking to automate this process to be more compliant.  The Registry is unhelpful in providing guidance in when AN and CS switches are due if you use the Switch Breach report. For retailers who use the Web interface this is really unhelpful, and we respectfully suggest that the EA make some changes to the report to help small retailers.		8/2020	

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

#### Code reference

Clause 5 Schedule 11.3

#### Code related audit information

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

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

#### Audit observation

An event detail report for the period for 04/10/18 to 06/04/20 was reviewed to identify CS files issued by Paua. The accuracy of the content of CS files was confirmed by checking a sample of five records. The content checked included:

- correct identification of meter readings and correct date of last meter reading,
- accuracy of meter readings, and
- accuracy of average daily consumption (which is based on the last week's consumption).

I checked the average daily consumption for all transfer CS files and did not identify any with daily consumption that was negative or over 200 kWh per day. Two were identified with a daily consumption of zero. These were checked.

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

#### Audit commentary

##### CS content

CS files are manually created on the registry using information from Paua's system. Paua are planning to automate this and intend to undertake a material change prior to the changes being deployed.

The registry functional specification requires average daily kWh to be based on the average daily consumption for the last read to read period. Paua receives daily readings and that is expected to be used as the average daily consumption figure. The two ICPs with a zero average daily consumption figure were checked and confirmed to be valid.

Paua uses AMI reads where possible for CS files. The content of five transfer CS files was examined including two ICPs where an estimate was sent. This found all to be correct except:

- ICP 0000127676TRF2B which had:
  - the incorrect average daily consumption figure,
  - the incorrect last actual read date, and
  - the estimated read recorded was different to the read recorded in Foxworks. Paua has corrected this since the audit and the last read now matches the read in the CS file.

This meter stopped communicating and therefore Paua had to request that the customer switch away as no data was being received. This is recorded as non-compliance below and in **sections 2.1, 4.16 and 12.7**.

### **CS timeliness**

Due to the spot market pricing Paua has processed an increased number of switch losses during the audit period. The switch breach report recorded 70 late transfer CS files. The late files were checked:

- 18 had an AN sent therefore the CS file must be sent within five business days of the event date. Analysis of these found six were sent late, all were checked and found to be due to a misunderstanding of the code requirement.
- 52 had no AN sent, therefore the final information must be sent within three business days of the NT being received. I found they had all been sent between 1-3 days late. A typical characteristic sample of five ICPs were checked and found to be due to a misunderstanding of the code requirement.

Paua thought that an AN or CS was expected to be sent within five business days of the NT receipt or the event date. The code does not require an AN to be sent but if none is sent then the CS file must be sent within three business days of the NT being received. They now have the Veritek switching diagrams and understand the requirements.

Paua intends to automate the switching function to ensure the timeliness requirements are met and will undertake a material change audit prior to going live with this functionality.

### **Audit outcome**

Non-compliant

Non-compliance	Description		
Audit Ref: 4.3 With: Clause 5 Schedule 11.3  From: 04-Oct-18 To: 06-Apr-20	58 late CS files. CS file content incorrect for one ICP. Potential impact: Low Actual impact: Low Audit history: Three times Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	Controls are rated as moderate as the process is manual and will mitigate risk most of the time but there is room for errors to occur.  The audit risk rating is low as the majority of the late files were only one to two days late and 99% of the CS files were sent using AMI data which have a high level of accuracy.		
Actions taken to resolve the issue		Completion date	Remedial action status
Systems development to try to automate as the Switch Breach report is unhelpful in this regard. We would however like to point out that ~99% of our CS switches are done on the proposed date.		8/2020	Investigating
Preventative actions taken to ensure no further issues will occur		Completion date	
We are looking to automate this process to be more compliant.		8/2020	

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

##### Code reference

Clause 6(1) and 6A Schedule 11.3

##### Code related audit information

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

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

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

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

### **Audit observation**

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

The event detail report for 04/10/18 to 06/04/20 was reviewed to identify all read change requests and acknowledgements during the audit period.

- Four RR files were issued to Paua by other traders for transfer switches. Three were accepted and one was rejected. I reviewed the rejected file to confirm the reasons for rejection were valid and confirm that Paua's system reflected the outcome of the RR process, and the accepted files to confirm that Paua's system reflected the outcome of the RR process.
- 18 RR files were issued by Paua for transfer switches. 17 were accepted and one was rejected. I reviewed five RR files issued by Paua including the one rejected file and four accepted files to confirm that the content of the files was accurate, and that Paua's system reflected the outcome of the read change process.

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

### **Audit commentary**

All switching is done manually on the registry. Paua are planning to automate this and intend to undertake a material change prior to the changes being deployed.

### **Application of CS readings**

Paua only supplies ICPs with advanced meters. Switch reads are compared to AMI readings received from AMS for new switch ins at least twice per week. Where the switch event reading differs from the AMI data, Paua issues a read change request as soon as possible. These read change requests normally meet the requirements of 6(2) and (3) Schedule 11.3, and are required to be accepted by the losing retailer.

The last audit identified an issue where if a read change issued by Paua was rejected that the switch start read was being overwritten with actual data resulting in the agreed switch start read not being used in submission. I confirmed this has been corrected.

To confirm the process for CS readings where no RR was issued, I checked a sample of five transfer CS files with estimated readings where no RR had been issued. I found that the correct readings were applied.

### **RR**

Paua does not always have the first "midnight reading" for time of switch in, but this is calculated by subtracting 48 half hour values from the midnight reading for the end of the first day. I consider this meets the requirement to "provide the losing trader with a switch event meter reading obtained from an interrogation of a certified metering installation ...".

I checked the content of five read change requests for transfer moves and found it was accurate. All requests were appropriately supported by AMI data.



I checked the three RR requests rejected by the other trader and a later RR request from the other trader was accepted. Two RR files were sent for the same ICP incorrectly and validly rejected by the other trader.

A sample of five read change requests issued by Paua for transfer moves relating to five ICPs were reviewed, including the one file rejected by the other retailer, and the four accepted by the other retailer. All reads were correctly recorded.

I followed up the non-compliance found in the last audit where for two rejected RRs, actual AMI data had replaced the agreed switch readings. In total, the AMI data was 26 kWh higher than the agreed switch readings for the affected ICPs. This has been corrected but as the correction was made after the 14-month revision therefore it will not flow through to submission. This is recorded as non-compliance in **sections 2.1, 2.2 and 12.7,**

## **AC**

To confirm that Paua's system reflected the outcome of the RR process, I checked:

- the five ACs where Paua had rejected the other trader's RR for a transfer switch, and found the RR was validly rejected, and the correct readings were recorded, and
- all three ACs where Paua had accepted the other trader's RR for a transfer switch, and found the correct reads were applied.

## **Timeliness of RR and AC files**

The switch breach history report was examined, one late RR file was recorded for a transfer switch. No late AC files were identified.

## **Audit outcome**

Non-compliant

Non-compliance	Description		
Audit Ref: 4.4 With: Clause 6(1) and 6A Schedule 11.3 From: 12-Nov-18 To: 08-Oct-19	One late RR file. Potential impact: Low Actual impact: Low Audit history: Three times Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	The controls are assessed to be strong as reads are applied correctly and the switch breach report is monitored regularly. The breach risk rating is low, as the only one late RR was identified.		
Actions taken to resolve the issue		Completion date	Remedial action status
No action can be taken.		1/5/2020	Cleared
Preventative actions taken to ensure no further issues will occur		Completion date	
Not sure what else can be done.		1/5/2020	

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

##### Code reference

Clause 6(2) and (3) Schedule 11.3

##### Code related audit information

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

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

##### Audit observation

The event detail report for the period from 04/10/18 to 06/04/20 was reviewed to identify all read change requests and acknowledgements where clause 6(2) and (3) of schedule 11.3 applied.

##### Audit commentary

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

Paua issued 17 read change requests where clause 6(2) and (3) of schedule 11.3 applied. ICP 0000034324TRCCE was invalidly rejected by the other trader.

## Audit outcome

Compliant

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

#### Code reference

*Clause 7 Schedule 11.3*

#### Code related audit information

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

#### Audit observation

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

#### Audit commentary

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

## Audit outcome

Compliant

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

#### Code reference

*Clause 9 Schedule 11.3*

#### Code related audit information

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

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

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

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

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

#### Audit observation

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

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

### Audit commentary

All switching is done manually on the registry. Paua are planning to automate this and intend to undertake a material change prior to the changes being deployed.

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

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

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

### Audit outcome

Compliant

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

### Code reference

*Clause 10(1) Schedule 11.3*

### Code related audit information

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

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

### Audit observation

An event detail report for 04/10/18 to 06/04/20 was reviewed to:

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

All AN response codes were reviewed to determine whether they had been correctly applied.

The switch breach report was examined for the audit period.

### Audit commentary

All switching is done manually on the registry. Paua are planning to automate this and intend to undertake a material change prior to the changes being deployed. All 240 switch move AN files were examined on the event detail report.

**AN content**

I reviewed all AN codes against the registry list information and found two instances where the ICP was disconnected but the PD (premise disconnected) code was not sent. They were sent with the AD (advanced metering). This is recorded as non-compliance below.

**AN timeliness**

The switch breach report recorded 26 late AN files for move switches. 25 of these switches had no AN file sent and only the CS file sent. This discussed further under the next heading. The one remaining late AN file was checked and confirmed to be compliant.

A check of the event detail report found that no AN was sent for 175 (73%) switch moves (this includes those reported on the switch breach report). Paua did not realise that an AN file is required for a switch move and were only sending the CS file. They now have the Veritek switching diagrams and understand the requirements. This is recorded as non-compliance below.

**CS timeliness**

The switch breach report recorded 50 late CS files for switch moves. All were checked and found only seven to be genuinely late. These were checked and found all were sent late due to a misunderstanding that the CS file was to be sent within five business days of the event date not the NT receipt date. Paua now understand the code requirements.

**Audit outcome**

Non-compliant

Non-compliance	Description		
Audit Ref: 4.8 With: Clause 10(1) Schedule 11.3  From: 05-Oct-18 To: 25-Mar-20	Two incorrect AN codes send – AD was sent when the PD code was more accurate. No AN file sent for 175 AN switches. Seven late CS files Potential impact: Low Actual impact: Low Audit history: Three times Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	Controls are rated as moderate as they are now aware of the different switch timings and will work to these. The impact is assessed as low because the missing AN files has no material impact and only seven CS files were sent date.		
Actions taken to resolve the issue		Completion date	Remedial action status
No action can be taken.		1/5/2020	Investigating
Preventative actions taken to ensure no further issues will occur		Completion date	
We are trying to automate the system to remove operator error		8/2020	

#### 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, then within 10 business days of receiving notice the losing trader must also complete the switch by providing to the registry manager as described in subclause (1)(a):*

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

##### Audit observation

An event detail report for 04/10/18 to 06/04/20 was reviewed to:

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

### Audit commentary

Switches were completed as required by this clause. Paua accepted the proposed event dates for all but two ICPs. Both were checked and the proposed event date was within ten business days of the NT receipt date. The switch was completed using Paua's proposed event date, and a valid switch response code and final information were provided.

### Audit outcome

Compliant

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

### Code reference

*Clause 11 Schedule 11.3*

### Code related audit information

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

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

### Audit observation

An event detail report for the period for 04/10/18 to 06/04/20 was reviewed to identify CS files issued by Paua. The accuracy of the content of CS files was confirmed by checking a sample of five records. The content checked included:

- correct identification of meter readings and correct date of last meter reading,
- accuracy of meter readings, and
- accuracy of average daily consumption (which is based on the last week's consumption).

I checked the average daily consumption for all switch move CS files and did not identify any with daily consumption that was negative or over 200 kWh per day. One CS file had daily average consumption of zero, and was checked.

### Audit commentary

All switching is done manually on the registry. Paua are planning to automate this and intend to undertake a material change prior to the changes being deployed.

### CS content

CS files are manually created on the registry using information from Paua's system. Paua are planning to automate this and intend to undertake a material change prior to the changes being deployed.

The registry functional specification requires average daily kWh to be based on the average daily consumption for the last read to read period. Paua receives daily readings and that is expected to be used as the average daily consumption figure. The two ICPs with a zero average daily consumption figure were checked and confirmed to be valid.

Paua uses AMI reads where possible for CS files. The content of five switch move CS files was examined, and found:

- three ICPs where the average daily figure was calculated incorrectly, and
- one ICP where an incorrect estimate was sent.

These were due to human error. This is recorded as non-compliance.

#### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 4.10 With: Clause 11 Schedule 11.3  From: 04-Oct-18 To: 06-Apr-20	CS file content incorrect for three ICPs (one ICP had both the incorrect average daily consumption and an incorrect estimate). Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	Controls are rated as moderate as the process is manual and will mitigate risk most of the time but there is room for errors to occur. The audit risk rating is low as the volume of switch moves processed is low so this will have a minor impact to other participants.		
Actions taken to resolve the issue		Completion date	Remedial action status
HHR Reads are consistent with agreed reads.		1/5/2020	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
System automation is coming.		8/2020	



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

##### Code reference

Clause 12 Schedule 11.3

##### Code related audit information

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

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

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

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

##### Audit observation

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

The event detail report for 04/10/18 to 06/04/20 was reviewed to identify all read change requests and acknowledgements during the audit period.

- 30 RR files were issued by Paua for switch moves. 24 were accepted and four were rejected (this involved three ICPs as there were multiple requests per ICP). I reviewed five RR files issued by Paua, including the one rejected file and four accepted files to confirm that the content of the files was accurate, and that Paua's system reflected the outcome of the read change process.
- Four RR files were issued to Paua by other traders for switch moves. Three were accepted and one was rejected. I reviewed all four files to confirm that Paua's system reflected the outcome of the RR process, and the rejected file to confirm the reasons for rejection were valid.

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

### Audit commentary

The read recording and read renegotiation processes are the same for transfer switches and switch moves. These processes are discussed in **section 4.4**. In this section I have documented testing completed for switch moves to confirm the process and controls.

#### Application of CS readings

To confirm the process for CS readings where no RR was issued, I checked the only switch move CS file received with an estimated reading where no RR had been issued. I found that the correct reading was applied.

#### RR

I checked the content of nine read change requests for switch moves and found it was accurate for five requests. The four read changes with incorrect content found:

- two RR requests (ICP 0000194728TR155 & 0000078085TRB82) containing the incorrect reads were sent and rejected by the other traders, RRs containing the correct reads were subsequently sent and accepted for both ICPs, and
- two RR requests were sent in error for ICP 0000074508TRF16 and both were rejected by the other trader.

All requests were appropriately supported by AMI data and the correct read was applied in Foxworks in all instances.

I followed up the non-compliance found in the last audit where for one rejected RR (ICP 0000045673TR710), the agreed switch read was not in Foxworks. The AMI data was 481 kWh higher than the agreed switch reading. This has been corrected but as the correction was made after the 14-month revision it will not flow through to submission. This is recorded as non-compliance in **sections 2.1, 2.2 and 12.7**.

#### AC

To confirm that Paua's system recorded the correct outcome of the RR process, I checked the three ACs where Paua had rejected the other trader's RR for a switch move, and found the correct reads were applied and the RR was validly rejected. There were no switch move read requests accepted by Paua.

#### Timeliness of RR and AC files

The switch breach history report was examined and found no late RR or AC files identified.

### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 4.11 With: Clause 12 Schedule 11.3  From: 17-May-19 To: 31-Mar-20	<p>Four RR requests contained requested readings inconsistent with the HHR data.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Twice</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	<p>The controls are assessed to be moderate as the process is manual and will mitigate risk most of the time but there is room for errors to occur.</p> <p>The breach risk rating is low as the correct read was applied in all instances so there is no impact on reconciliation.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
Nothing.		1/5/2020	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
We have recently upgraded our system to provide a calculated read rather than have to manually get the read from our HHR raw data. Veritek have had visibility of what is calculated (essentially proves data for all fields on the AN and CS).		1/5/2020	

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

##### Code reference

Clause 14 Schedule 11.3

##### Code related audit information

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

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

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

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

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

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

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

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

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

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

#### **Audit observation**

An event detail report for 04/10/18 to 06/04/20 was reviewed to determine whether any HH switches occurred during the period.

#### **Audit commentary**

No HH switches occurred during the audit period.

#### **Audit outcome**

Compliant

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

#### **Code reference**

*Clause 15 Schedule 11.3*

#### **Code related audit information**

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

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

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

#### **Audit observation**

An event detail report for 04/10/18 to 06/04/20 was reviewed to determine whether any HH switches occurred during the period.

#### **Audit commentary**

No HH switches occurred during the audit period.

## Audit outcome

Compliant

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

#### Code reference

*Clause 16 Schedule 11.3*

#### Code related audit information

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

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

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

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

#### Audit observation

An event detail report for 04/10/18 to 06/04/20 was reviewed to determine whether any HH switches occurred during the period.

#### Audit commentary

No HH switches occurred during the audit period.

## Audit outcome

Compliant

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

#### Code reference

*Clauses 17 and 18 Schedule 11.3*

#### Code related audit information

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

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

- *for each ICP, the trader withdrawing the switch request must provide the registry manager with (clause 18(c)):*
  - *the participant identifier of the trader making the withdrawal request (clause 18(c)(i)); and*
  - *the withdrawal advisory code published by the Authority (clause 18(c)(ii))*
- *within five business days after receiving notice from the registry manager of a switch, the trader receiving the withdrawal must advise the registry manager that the switch withdrawal request is accepted or rejected. A switch withdrawal request must not become effective until accepted by the trader who received the withdrawal (clause 18(d)).*

- *on receipt of a rejection notice from the registry manager, in accordance with clause 18(d), a trader may re-submit the switch withdrawal request for an ICP in accordance with clause 18(c). All switch withdrawal requests must be resolved within 10 business days after the date of the initial switch withdrawal request (clause 18(e)).*
- *if the trader requests that a switch request be withdrawn, and the resolution of that switch withdrawal request results in the switch proceeding, within two business days after receiving notice from the registry manager in accordance with clause 22(b), the losing trader must comply with clauses 3,5,10 and 11 (whichever is appropriate) and the gaining trader must comply with clause 16 (clause 18(f)).*

#### **Audit observation**

The switch withdrawal process was examined.

The event detail report for 04/10/18 to 06/04/20 was reviewed to:

- identify all switch withdrawal requests (NWs) issued by Paua, the content of a sample of at least two ICPs for each withdrawal code (or all if less than two were available) were checked using the typical sampling methodology, as well as all withdrawal requests rejected by other traders,
- identify all switch withdrawal acknowledgements (AWs) issued by Paua - all eight AW rejections were reviewed, and
- confirm timeliness of withdrawal requests, as this is not currently being identified in the switch breach report.

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

#### **Audit commentary**

19 NWs were issued by Paua, and eight of those were rejected by the other trader. A sample of 11 NWs were checked, including all rejected files, and I found that all but one had the correct reason recorded. ICP 0000156037TRCD4 was sent with the WS code (Wrong switch) when the MI code (metering issue) was more accurate as the ICP did not have an AMI meter hence Paua had to withdraw the switch. This is recorded as non-compliance.

39 AW files were sent by Paua, and four of those rejected the other trader's NW. The NW rejections were all checked and found to be valid.

The switch breach report confirmed all NW files were sent on time. There was one AW file sent one day late. This is recorded as non-compliance.

Both non-compliances occurred when there was a large volume of switching occurring. There have been no late files since this date.

#### **Audit outcome**

Non-compliant

Non-compliance	Description		
Audit Ref: 4.15 With: Clauses 17 and 18 Schedule 11.3  From: 29-Sept-18 To: 15-Nov-18	One incorrect NW code. One late withdrawal acknowledgement. Potential impact: Low Actual impact: Low Audit history: Four times Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	Controls are rated as strong as they are sufficient to mitigate risk most of the time.  The audit risk rating is low as only two ICPs were affected.		
Actions taken to resolve the issue		Completion date	Remedial action status
No action can be taken.		1/5/2020	Investigating
Preventative actions taken to ensure no further issues will occur		Completion date	
Given the uncertain and inconsistent use of NW codes maybe some guidance from the EA might be appreciated.		1/5/2020	

#### 4.16. Metering information (Clause 21 Schedule 11.3)

##### Code reference

Clause 21 Schedule 11.3

##### Code related audit information

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

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

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

##### Audit observation

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

### Audit commentary

All meter readings used in the switching process are validated meter readings or permanent estimates.

I identified two CS files with the incorrect estimated reads recorded, as discussed in **sections 4.3** and **4.10**.  
Four RR files which contained incorrect readings, as discussed in **section 4.11**.

Paua's policy regarding the management of meter reading expenses is compliant.

### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 4.16 With: Clause 21 Schedule 11.3  From: 17-May-19 To: 31-Mar-20	Two CS files with incorrect estimated reads. Four incorrect RR reads were provided. Potential impact: Low Actual impact: Low Audit history: Three times Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	The controls are assessed to be moderate as the process is manual and will mitigate risk most of the time but there is room for errors to occur.  The breach risk rating is low as the correct read was applied in all instances so there is no impact on reconciliation.		
Actions taken to resolve the issue		Completion date	Remedial action status
HHR data is now corrected for future submissions.		1/5/2020	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
We have supplied our estimation engine to Veritek who are happy it is now compliant.		1/5/2020	



#### 4.17. Switch protection (Clause 1(a)&(b) of Part 1 and 11.15AA to 11.15AC of Part 11)

##### Code reference

*Clauses 1(a)&(b) of Part 1 & 11.15AA to 11.15AC of Part 11*

##### Code related audit information

**Switch protected** period means the period that:

(1) (a) starts on the earlier of –

(i) the day on which a losing retailer receives notice or otherwise becomes aware that a customer is switching to a gaining retailer; or

(ii) the day on which a gaining retailer assumes responsibility for billing a customer of a losing retailer for electricity; and

(b) ends on the earlier of –

(i) the date that is 180 days after the relevant date specified in paragraph (a); or

(ii) the date on which the losing retailer receives a notice under clause 4A(1) of Schedule 11.5 from the Authority or otherwise becomes aware that the customer is switching from the gaining retailer back to the losing retailer due to an event of default; or

(iii) if the gaining retailer is a trader and makes a withdrawal request, the date on which the losing retailer (if a trader) receives notice of that withdrawal request under clause 22(b) of Schedule 11.3; or

(iv) if the trader for the losing retailer and gaining retailer (neither of whom is a trader) is the same, the date on which the trader receives advice from the gaining retailer withdrawing the switch request from the losing retailer.

#### 11.15AA to 11.15AC

*A losing retailer must not, by any means, including by using a third party or agent acting on its behalf, contact any customer who is switching from the losing retailer to a gaining retailer to attempt to persuade the customer to terminate the arrangement with the gaining retailer during the switch protected period, including by –*

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

(b) offering an enticement to the customer.

(1) *A losing retailer must not use information relating to a customer that it obtained prior to or during the switch protected period, including information that may be used to contact the customer, during the switch protected period to do any of the following:*

(a) contact the customer for any purpose other than a purpose specified in clause 11.15AB;

(b) include the customer in a marketing campaign other than a general marketing campaign; or

(c) enable any other retailer, except the gaining retailer, to contact the customer.

(2) *This clause does not limit any other requirement to maintain the confidentiality of any information relating to a customer that is imposed by the contract entered into between the losing retailer and the customer or otherwise by law.*

### **Audit observation**

The code has changed as of 31/03/20 to remove the switch save protection scheme. No save activity can be undertaken by a losing trader until 180 days after either they receive notification of the switch loss or the date on which the gaining trader assumes responsibility for the billing of a customer, whichever is earlier.

As this audit covers both the switch save protection and the switch protection clauses, I have assessed Paua's compliance against both clauses. Paua was a switch save protected trader. Win-backs from 04/10/18 to 06/04/20 were analysed. I identified all withdrawn switches with a CX code applied prior to the switch completion date for any switch save protected retailer up until 31/03/20 and any NW requests sent from 1/04/20 to confirm that these complied with the switch protection clauses.

### **Audit commentary**

Paua was a save protected retailer.

Paua emails the customers for ICPs requested by another retailer only to confirm that the switch request is valid, and if they have any comments on why they decided to switch. No win-back activity is initiated with lost customers.

The event detail report identified 12 CX coded switch withdrawal requests; all were sent after the switch event date and none have been sent from 01/04/20 to 06/04/20.

### **Audit outcome**

Compliant

## 5. MAINTENANCE OF UNMETERED LOAD

### 5.1. Maintaining shared unmetered load (Clause 11.14)

#### Code reference

Clause 11.14

#### Code related audit information

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

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

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

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

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

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

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

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

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

#### Audit observation

The process to identify and monitor unmetered load was discussed. The registry list for 04/10/18 to 06/04/20 was reviewed to identify all unmetered load.

#### Audit commentary

Paua does not supply any ICPs with shared unmetered load, and does not intend to. No ICPs with unmetered load were identified on the registry list.

Processes to prevent ICPs with unmetered load from switching in, and to monitor existing ICPs for addition of unmetered load are discussed in **section 3.7**. I have recommended in **section 2.1**, that a check against the Distributor unmetered load details is added to the discrepancy reporting.

#### Audit outcome

Compliant

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

### Code reference

*Clause 10.14 (2)(b)*

### Code related audit information

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

### Audit observation

The registry list for 04/10/18 to 06/04/20 was reviewed to identify all ICPs with unmetered load during the period, and assess compliance.

### Audit commentary

Paua has not supplied any ICPs with unmetered load.

### Audit outcome

Compliant

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

### Code reference

*Clause 10.14 (5)*

### Code related audit information

*If the unmetered load limit is exceeded the retailer must:*

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

### Audit observation

The registry list for 04/10/18 to 06/04/20 was reviewed to identify all ICPs with unmetered load during the period and assess compliance.

### Audit commentary

Paua has not supplied any ICPs with unmetered load.

### Audit outcome

Compliant

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

##### **Code reference**

*Clause 11 Schedule 15.3, Clause 15.37B*

##### **Code related audit information**

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

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

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

##### **Audit observation**

The registry list for 04/10/18 to 06/04/20 was reviewed to identify all ICPs with unmetered load during the period, and assess compliance.

##### **Audit commentary**

Paua has not supplied any ICPs with distributed unmetered load, and does not intend to.

##### **Audit outcome**

Compliant

## 6. GATHERING RAW METER DATA

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

#### Code reference

*Clause 10.13, Clause 10.24 and Clause 15.13*

#### Code related audit information

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

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

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

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

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

#### Audit observation

Processes for distributed generation were reviewed. The registry list for 04/10/18 to 06/04/20 was reviewed to confirm whether Paua had supplied any ICPs with generation during the audit period.

#### Audit commentary

##### **Metering installations installed**

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

No new connections were completed during the audit period.

##### **Distributed Generation**

Paua declines applications to supply customers with distributed generation. ICP 0000016838TRCFE was supplied by Paua from 30/08/19 to 18/12/19. The distributor indicates that distributed generation is present but the metering recorded has no injection channel. I checked this during the audit and confirmed that no distributed generation is present.

##### **Bridged meters**

Paua did not identify any examples of bridged meters during the audit period.

#### Audit outcome

Compliant

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

### Code reference

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

### Code related audit information

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

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

*The participant responsible for the metering installation must:*

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

### Audit observation

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

### Audit commentary

Review of the NSP table confirmed that Paua is not responsible for any GIPs.

### Audit outcome

Not applicable

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

### Code reference

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

### Code related audit information

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

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

### Audit observation

The registry list for 04/10/18 to 06/04/20 was reviewed, to identify any ICPs with profiles that require certification of the control device.

### Audit commentary

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

### Audit outcome

Compliant

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

##### Code reference

*Clause 10.43(2) and (3)*

##### Code related audit information

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

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

##### Audit observation

Processes relating to defective metering were examined.

Examples of defective meters were reviewed to determine whether the MEP was advised and if appropriate action was taken.

##### Audit commentary

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

Paua provided 11 examples of potential defective meters during the audit period. Seven related to communication issues and four related to faulty meters. The MEP had either been notified, or notified Paua of the issue.

##### Audit outcome

Compliant

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

##### Code reference

*Clause 2 Schedule 15.2*

##### Code related audit information

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

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

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

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



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

- a) ensure the system is to within +/- 5 seconds of NZST or NZDST*
- b) compare the meter time to the system time*
- c) determine the time error of the metering installation*
- d) if the error is less than the maximum permitted error, correct the meter's clock*
- e) if the time error is greater than the maximum permitted error then:*
  - i) correct the metering installation's clock*
  - ii) compare the metering installation's time with the system time*
  - iii) correct any affected raw meter data.*
- f) download the event log.*

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

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

#### **Audit observation**

HHR AMI data is provided by AMS (NGCM) and IntelliHB Limited (MTRX) as MEPs. Interrogation requirements and clock synchronisation was reviewed as part of their MEP audits.

#### **Audit commentary**

Fulfilment of the interrogation systems requirements was examined as part of the MEP's audits, and found to be compliant.

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

#### **Audit outcome**

Compliant

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

#### **Code reference**

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

#### **Code related audit information**

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

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

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

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

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

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

### Audit observation

The data collection process was examined. No manual, customer, or photo reads are received.

### Audit commentary

HHR AMI data is provided by AMS (NGCM) and IntelliHUB Limited (MTRX) as MEPs. Validated readings are derived from actual meter readings. IntelliHUB Limited (MTRX) provides estimates where data is missing. Paua will use these if provided and they will be marked as estimates. This has not occurred during the audit period.

### 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

Review of the registry list for 04/10/18 to 06/04/20 confirmed that all active ICPs had submission type HHR, and HHR or AMI metering installed.

### Audit commentary

All ICPs have submission type HHR. Review of switch reads in **sections 4.3** and **4.10** confirmed that they are applied from the correct time.

### 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**

Review of the registry list for 04/10/18 to 06/04/20 confirmed that all active ICPs had submission type HHR, and HHR or AMI metering installed.

#### **Audit commentary**

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

#### **Audit outcome**

Not applicable

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

#### **Code reference**

*Clause 8(1) and (2) Schedule 15.2*

#### **Code related audit information**

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

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

#### **Audit observation**

Review of the registry list for 04/10/18 to 06/04/20 confirmed that all active ICPs had submission type HHR, and HHR or AMI metering installed.

#### **Audit commentary**

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

#### **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 4 months for 90% of the non half hour metered ICPs.*

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

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

#### **Audit observation**

Review of the registry list for 04/10/18 to 06/04/20 confirmed that all active ICPs had submission type HHR, and HHR or AMI metering installed.

#### **Audit commentary**

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

#### **Audit outcome**

Not applicable

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

#### **Code reference**

*Clause 10 Schedule 15.2*

#### **Code related audit information**

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

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

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

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

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

#### **Audit observation**

Review of the registry list for 04/10/18 to 06/04/20 confirmed that all active ICPs had submission type HHR, and HHR or AMI metering installed.

#### **Audit commentary**

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

#### **Audit outcome**

Not applicable

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

#### **Code reference**

*Clause 11(1) Schedule 15.2*

#### **Code related audit information**

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

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

#### **Audit observation**

HHR AMI data is provided by AMS (NGCM) and IntelliHUB Limited (MTRX) as MEPs, and compliance was assessed as part of their MEP audits.

### Audit commentary

AMS (NGCM) and IntelliHUB Limited (MTRX) are responsible for HHR data collection, and compliance is recorded in their audit reports.

### Audit outcome

Compliant

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

### Code reference

*Clause 11(2) Schedule 15.2*

### Code related audit information

*The following information is collected during each interrogation:*

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

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

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

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

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

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

### Audit observation

HHR AMI data is provided by AMS (NGCM) and IntelliHUB Limited (MTRX) as MEPs.

### Audit commentary

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

### Audit outcome

Compliant

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

##### Code reference

*Clause 11(3) Schedule 15.2*

##### Code related audit information

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

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

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

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

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

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

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

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

##### Audit observation

HHR AMI data is provided by AMS (NGCM) and IntelliHUB Limited (MTRX) as MEPs.

##### Audit commentary

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

##### Audit outcome

Compliant

## 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

Trading period duration was reviewed as part of AMS (NGCM) and IntelliHUB Limited (MTRX) MEP audits.

#### Audit commentary

MEPs are responsible for trading period duration, and compliance is recorded in their audit reports. Clock synchronisation is discussed further in **section 6.5**.

#### Audit outcome

Compliant

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

#### Code reference

*Clause 18 Schedule 15.2*

#### Code related audit information

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

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

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

#### Audit observation

Raw meter data is retained by AMS (NGCM) and IntelliHUB Limited (MTRX) as MEPs, and compliance is assessed as part of their MEP audits.

Processes to archive and store raw meter data were reviewed.

#### Audit commentary

Compliance with this clause is recorded in the MEP's audit report.

Access to modify readings is restricted through log on privileges, and audit trails are discussed in **section 2.4**.

Paua retains meter reading data for over 48 months. I viewed the earliest meter readings recorded in Paua's system, which matched the switch in date for their earliest customer on 23/01/2015.

I traced volumes for one month for three AMS HHR ICPs and two MTRX HHR ICPs from the source data to Paua's system and the HHR aggregates submissions for October 2019. The reads and volumes matched the source data. This confirmed that the reads had not been modified.

## **Audit outcome**

Compliant

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

## **Code reference**

*Clause 21(5) Schedule 15.2*

## **Code related audit information**

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

## **Audit observation**

Processes to record non-metering information were discussed.

## **Audit commentary**

No non metering information is collected by Paua.

## **Audit outcome**

Compliant



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

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

#### Code reference

Clause 19(1) Schedule 15.2

#### Code related audit information

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

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

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

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

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

#### Audit observation

Review of the registry list for 04/10/18 to 06/04/20 confirmed that all active ICPs had submission type HHR, and HHR or AMI metering installed.

#### Audit commentary

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

#### Audit outcome

Not applicable

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

#### Code reference

Clause 19(2) Schedule 15.2

#### Code related audit information

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

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

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

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

### Audit observation

Processes for correction of HHR meter readings were reviewed.

### Audit commentary

The estimation process has been automated during the audit period. This should have been subject to a material change before being put into production. This is recorded as non-compliance in **section 1.11**.

The process for estimation of missing data is set out below:

- once loaded, the files are checked for missing data,
- where missing data is detected Fireworks calculates an estimate, and
- a journal is created in Fireworks of these changes.

Three examples of corrections were identified during the audit period. The automated estimation process was expected to be calculated based on the best information available, considering the surrounding data and similar periods. Examination of the corrections found that the automated process was inserting a flat interval pattern which did not match the midnight read in all instances. This is recorded as non-compliance. Paua have replaced this coding and the estimation process now correctly considers the surrounding data and similar periods. I rechecked the three examples of corrections in Foxworks post the coding change and confirmed that it is working as expected. All estimated data matches to the midnight reads and is within the 10% percentage threshold. This is also discussed in **section 9.4**.

If actual data becomes available after data has been estimated, it is automatically imported into Foxworks and will replace estimated the data except in the case where it is a switch start read, as discussed in **section 4.4**. Duplicate readings for the same trading period are detected through read reconciliations, completed weekly, monthly (for the previous month), and periodically for periods more than one month ago. If there is a duplicate for a trading period, the estimated readings are removed.

### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 8.2 With: Clause 19(2) of Schedule 15.2  From: 04-Oct-18 To: 06-Apr-20	Corrections not materially similar to the period with missing data. Potential impact: Low Actual impact: Low Audit history: None Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	Controls are rated as strong as Foxworks has been corrected and additional checks have been put in place to ensure that corrections are processed correctly.  The audit risk rating is low as the volume of corrections is very minor and all corrections affected have been recalculated.		
Actions taken to resolve the issue		Completion date	Remedial action status
HHR data is correct for future submissions.		1/5/2020	Cleared
Preventative actions taken to ensure no further issues will occur		Completion date	
We have supplied our estimation engine to Veritek who are happy it is now compliant.		1/5/2020	

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

#### Code reference

Clause 19(3) Schedule 15.2

#### Code related audit information

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

#### Audit observation

The registry list for 04/10/18 to 06/04/20 was reviewed to identify any ICPs which require loss compensation.

#### Audit commentary

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

#### Audit outcome

Compliant

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

##### Code reference

*Clause 19(4) and (5) Schedule 15.2*

##### Code related audit information

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

*If data is corrected or altered, a journal must be generated. The journal must contain the following:*

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

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

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

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

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

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

##### Audit observation

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

Raw meter data is collected by the MEP, and data retention was reviewed as part of their MEP audit.

##### Audit commentary

Raw meter data is held by the MEP. Audit trails are discussed in **section 2.4**.

Paua creates a journal for all corrections. This was reviewed as part of the correction process detailed in **section 8.2** and confirmed to be compliant.

##### 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 event detail report for 04/10/18 to 06/04/20 was reviewed to identify all CS and RR files provided to other participants during the audit period. The accuracy of readings provided in a sample of CS and RR files was checked in **sections 4.3, 4.4, 4.10 and 4.11**.

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

#### Audit commentary

Review of CS and RR content confirmed that switch reads were correctly labelled. Readings are clearly identified in Paua's systems.

#### Audit outcome

Compliant

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

#### Code reference

*Clause 3(4) Schedule 15.2*

#### Code related audit information

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

*3(4)(a) - validated meter readings*

*3(4)(b) - estimated readings*

*3(4)(c) - permanent estimates.*

#### Audit observation

Processes for derivation of volumes were discussed and observed.

#### Audit commentary

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

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

#### Audit outcome

Compliant

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

#### Code reference

Clause 3(5) Schedule 15.2

#### Code related audit information

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

#### Audit observation

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

HHR AMI data is provided by AMS (NGCM) and IntelliHUB Limited (MTRX) as MEPs. Compliance was assessed as part of their MEP audits.

#### Audit commentary

HHR AMI data is provided by AMS (NGCM) and IntelliHUB Limited (MTRX) is responsible for HHR data collection, and this is reviewed as part of their audit. The MEP retains raw, unrounded data.

Meter reading data is recorded in Paua's system at three decimal places.

#### Audit outcome

Compliant

### 9.4. Half hour estimates (Clause 15 Schedule 15.2)

#### Code reference

Clause 15 Schedule 15.2

#### Code related audit information

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

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

#### Audit observation

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

#### Audit commentary

Where actual data is unavailable by the time of submission, Foxworks generates estimates. The estimation process has been automated during the audit period. This should have been subject to a material change before being put into production. This is recorded as non-compliance in **section 1.11**.

Estimates are used mainly where there is a gap in data, such as a period of communications failure where data cannot be retrieved. If actual data becomes available later, it is loaded into the system, and the estimates are removed through the read reconciliation process. The process for the estimation of missing data is detailed in **section 8.2**

I reviewed five examples of estimates and found that the automated process was inserting a flat interval pattern which did not match the midnight read in all instances. This is recorded as non-compliance. Paua have replaced this coding and the estimation process now correctly considers the surrounding data and similar periods. I rechecked three estimations in Foxworks post the coding change and confirmed the estimated data matched to the midnight reads and was within the 10% percentage threshold.

#### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 9.4 With: Clause 15 of Schedule 15.2 From: 04-Oct-18 To: 06-Apr-20	Estimations did not meet reasonable endeavours. Potential impact: Low Actual impact: Low Audit history: None Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	Controls are rated as strong as Foxworks has been corrected and additional checks have been put in place to ensure that corrections are processed correctly. The audit risk rating is low as the volume of corrections is very minor and all corrections affected have been recalculated.		
Actions taken to resolve the issue		Completion date	Remedial action status
HHR data corrected for future submissions		1/5/2020	Cleared
Preventative actions taken to ensure no further issues will occur		Completion date	
We have supplied our estimation engine to Veritek who are happy it is now compliant.		1/5/2020	

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

### Code reference

Clause 16 Schedule 15.2

### Code related audit information

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

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

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

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

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

### Audit observation

Review of the registry list for 04/10/18 to 06/04/20 confirmed that all active ICPs had submission type HHR, and HHR or AMI metering installed.

### Audit commentary

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

### Audit outcome

Not applicable

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

### Code reference

Clause 17 Schedule 15.2

### Code related audit information

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

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

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

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

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

I reviewed the HHR data validation process, including meter event logs, and volume validation processes.

Validation of electronic readings was also reviewed as part of the MEP audits.

### **Audit commentary**

Electronic meter reading information is provided by the MEP, and data validation was reviewed as part of their MEP audit. Meters are interrogated regularly, and there is little risk that data can be overwritten. Data is held for a longer period at the meter and can be re-interrogated later if required.

Paua conducts checks for missing and invalid data.

Zero consumption usually occurs when the meter has been switched off, and is identified through the missing data processes.

Paua checks that consumption is in line with expected patterns at an ICP level, as part of their weekly billing validations.

Paua receives meter event reports from AMS (NGCM) and IntelliHUB Ltd (MTRX). These are loaded into their system and reviewed weekly. Paua works through the events and checks data before and after the event occurred to determine whether action is required. I reviewed events for five ICPs and confirmed that none required any action from Paua.

### **Audit outcome**

Compliant

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

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

#### Code reference

Clause 13.136

#### Code related audit information

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

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

#### Audit observation

The NSP table on the registry was reviewed.

#### Audit commentary

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

#### Audit outcome

Not applicable

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

#### Code reference

Clause 13.137

#### Code related audit information

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

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

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

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

#### Audit observation

The NSP table on the registry was reviewed.

#### Audit commentary

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

#### Audit outcome

Not applicable

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

#### Code reference

*Clause 13.138*

#### Code related audit information

*The generator must provide the information required by clauses 13.136 and 13.137, 13.138(1)(a)- adjusted for losses (if any) relative to the grid injection point or, for embedded generators the grid exit point, at which it offered the electricity 13.138(1)(b)- in the manner and form that the pricing manager stipulates 13.138(1)(c)- by 0500 hours on a trading day for each trading period of the previous trading day. The generator must provide the half-hour metering information required under this clause in accordance with the requirements of Part 15 for the collection of the generator's volume information.*

#### Audit observation

The NSP table on the registry was reviewed.

#### Audit commentary

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

#### Audit outcome

Not applicable

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

#### Code reference

*Clause 13.140*

#### Code related audit information

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

#### Audit observation

The NSP table on the registry was reviewed.

#### Audit commentary

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

#### Audit outcome

Not applicable

## 11. PROVISION OF SUBMISSION INFORMATION FOR RECONCILIATION

### 11.1. Buying and selling notifications (Clause 15.3)

#### Code reference

Clause 15.3

#### Code related audit information

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

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

#### Audit observation

A registry list was reviewed for the period from 04/10/18 to 06/04/20 to confirm the profiles used.

#### Audit commentary

Paua only uses the HHR profile; buying and selling notifications are not required.

#### Audit outcome

Compliant

### 11.2. Calculation of ICP days (Clause 15.6)

#### Code reference

Clause 15.6

#### Code related audit information

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

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

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

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

#### Audit observation

The process for the calculation of ICP days was examined by checking the ICP days submitted for December 2019 against the active ICP days recorded on the registry list for seven NSPs.

I reviewed variances for 16 months of GR100 reports.

### Audit commentary

The review of the AV110 report for December 2019 found that ICP aggregation was correct for all NSPs checked.

The following table shows the ICP days difference between Paua's database and the RM return file (GR100) for all available revisions for 16 months. Negative percentage figures indicate that the Paua's ICP days are higher than those contained on the registry, and positive percentage figures indicate that the Paua's ICP days are lower than those contained on the Registry. The differences appear small and reasonable.

Month	Ri	R1	R3	R7	R14
Sep-18	0.06%	0.03%	0.03%	0.11%	0.22%
Oct-18	-0.15%	-0.08%	-0.12%	-0.04%	0.51%
Nov-18	0.17%	0.18%	0.27%	0.37%	0.21%
Dec-18	0.45%	0.37%	0.55%	0.55%	0.13%
Jan-19	0.16%	0.16%	0.13%	0.24%	-0.13%
Feb-19	0.27%	0.16%	0.42%	-0.17%	-
Mar-19	0.40%	0.40%	0.52%	-0.44%	-
Apr-19	0.35%	0.35%	0.35%	-0.38%	-
May-19	0.09%	0.09%	0.23%	-0.35%	-
Jun-19	-0.03%	-0.07%	-0.39%	-0.39%	-
Jul-19	-0.25%	-0.26%	-0.39%	-0.39%	-
Aug-19	-0.35%	-0.35%	-0.35%	-0.35%	-
Sep-19	0.03%	-0.10%	-0.10%	-	
Oct-19	-0.32%	-0.32%	-0.36%		
Nov-19	-0.16%	-0.32%	-0.16%		
Dec-19	-0.38%	-0.29%	-0.29%		

I checked eight NSP level differences between the retailer and registry days and found that they related to switch timing, inactive ICPs with volume being submitted for and some NSP changes not being processed correctly resulting in ICP days differences. The NSP changes are discussed in detail in **section 11.4** and are recorded as non-compliance. I recommend that Paua monitor the ICP missing report (GR090) to ensure that all such changes are captured.

Recommendation	Description	Audited party comment	Remedial action
Calculation of ICP days	Review ICP missing report regularly.	We are building this into our systems	Identified

#### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 11.2 With: Clause 15.6  From: 01-Sept-18 To: 01-Dec-19	Inaccurate ICP days were reported for a small number of ICPs due to NSP changes not being processed correctly.  Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	Controls are currently rated as moderate but will be strengthened to strong if the recommendation of checking the ICPs missing (GR090) report is adopted.  The impact is assessed to be low, as the number of ICPs affected is small in relation to the market.		
Actions taken to resolve the issue		Completion date	Remedial action status
HHR data corrected.		1/5/2020	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Our current system is controlling this. The three ICP were incorrectly assigned the NSP manually when we rebuilt our customer tables. It was not picked up because the change happened many months prior.		1/5/2020	

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

#### Code reference

Clause 15.7

#### Code related audit information

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

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

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

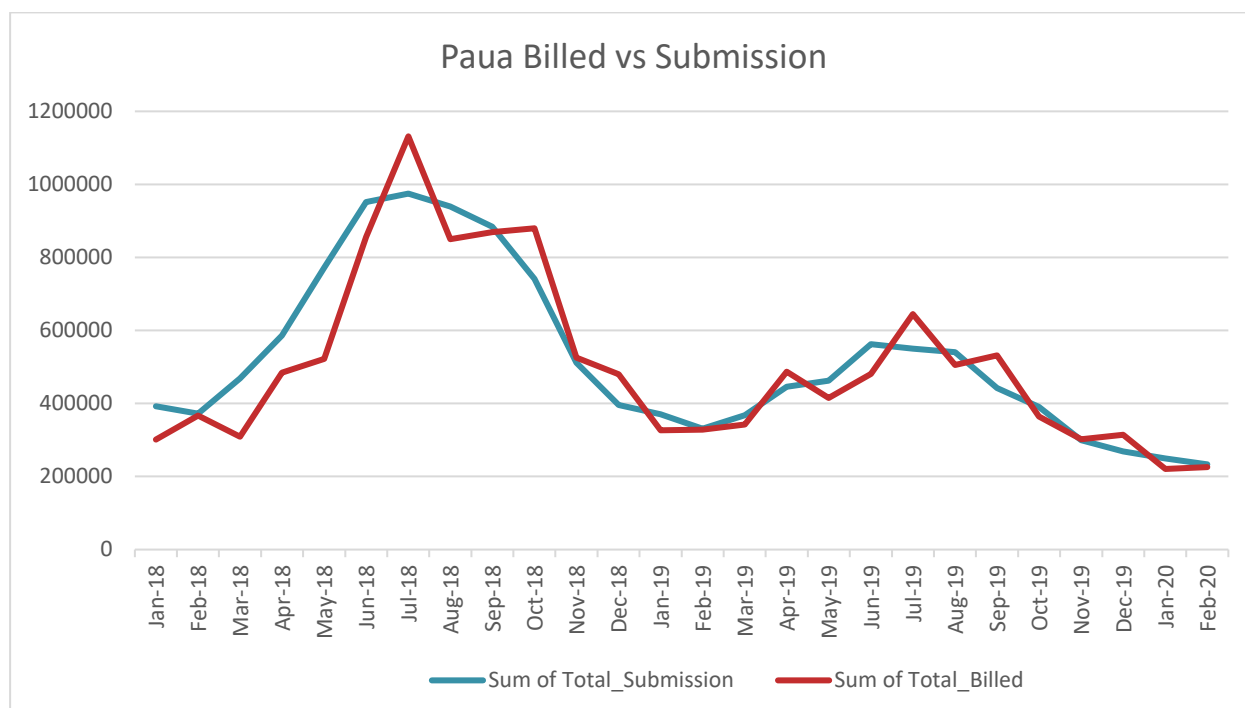
#### Audit observation

The process for the calculation of as billed volumes was examined.

GR130 reports for November 2018 to February 2020 were reviewed to confirm whether the relationship between billed and submitted data appears reasonable.

#### Audit commentary

The difference between the billed and submitted data has decreased during the audit period and was -0.4% for the year ended February 2020 (billed lower than submission) and was -3.3% for the two year period ending February 2020.



The discrepancy found in the last audit has been fixed and all billed information is being reported.

#### Audit outcome

Compliant

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

##### Code reference

Clause 15.8

##### Code related audit information

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

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

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

##### Audit observation

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

The GR090 ICP Missing files were examined for September 2018 to December 2019. An typical case sample of the ten ICPs with the most frequent ICP missing differences were reviewed.

##### Audit commentary

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

I checked that the process for the calculation and aggregation of HHR data is correct, by:

- matching HHR aggregates information with the HHR volumes data for four submissions and compliance was confirmed, only rounding differences were present, and
- tracing volumes for October 2019 for a sample of five HHR ICPs from the source data to the HHR aggregates submissions, and found the volumes reported matched the source files.

I also reviewed Paua's volumes and aggregates for December 2018, May and October 2019 for reasonableness, and did not find any evidence of under submission of volumes for these months.

The GR090 ICP Missing files were examined for all revisions for September 2018 to December 2019. A diverse sample of ten ICPs were reviewed and found:

- Three were due to submissions not being made to correct information. This resulted in volumes being purchased by Paua that should have been zeroed out for ICP 0000043059TRB12 for September and October 2018. Volumes should have been submitted for ICP 0000017837TR280 for September 2018, but this is now beyond the revision cycle. Volumes were missing for ICP 0000067362TRE70 up to revision 7 for December 2018 but this was submitted for revision 14.
- Three (ICPs 0000030529TR313, 0000026260TRDC4 and 0000077388TREBA) were due to being NSP changes not being processed correctly resulting in the volumes being reconciled to the incorrect NSP but I note all were within the same balancing area so the impact on submission is minor.
- Three were due the incorrect status being recorded on the registry. Submission occurred correctly for all ICPs.
- ICP 0000122424TRA81 was submitted with zero consumption in the initial revisions for September and October 2018 and no further submissions were made and no consumption occurred.



The four submission accuracy errors identified in the previous audit were rechecked:

Jan 2018/ Dec 2018 errors	April 2020 findings
<p>From Jan 2018 audit:</p> <p>An NSP change from HAY0331 to HAY0111 effective 10/10/17 for ICP 1001147041CK514 was not processed from the correct date, which resulted in volumes and aggregates being temporarily reported against an incorrect NSP.</p>	<p>Still existing:</p> <p>Submitted but the revision was submitted after the 14-month revision cycle so was not corrected.</p>
<p>From Dec 2018 audit:</p> <p>ICPs 0000008330TRDC5, 0000149021TR677 were missed from some submissions because their meters were not communicating and estimate data was not prepared in time for the initial submission. Revisions were not provided.</p>	<p>Still existing:</p> <p>Submitted but the revision was submitted after the 14-month revision cycle so was not corrected.</p>
<p>From Dec 2018 audit:</p> <p>ICPs 0000031564TRF4D, 0000179359TR311 and 0000055969TR8C2 were missed for the first part month they were supplied by Paua due to switch timing. Revisions were not provided</p>	<p>Still existing:</p> <p>Submitted but the revision was submitted after the 14-month revision cycle so was not corrected.</p>
<p>From Dec 2018 audit:</p> <p>0000006150TR0F2 was withdrawn after the October 2017 initial submission but remained in revisions because revision data was not provided.</p>	<p>Still existing:</p> <p>Submitted but the revision was submitted after the 14-month revision cycle so was not corrected.</p>

As is evident above, wash ups have not been consistently being provided. Paua has now added functionality that prompts the operator for the revision files required for each submission. This is recorded as non-compliance below and in **sections 2.1, 12.2 and 12.7**.

#### Audit outcome

Non-compliant

Non-compliance	Description		
<p>Audit Ref: 11.4</p> <p>With: Clause 15.8</p> <p>From: 01-Oct-18</p> <p>To: 01-Dec 19</p>	<p>The HHR aggregates file does not contain electricity supplied information.</p> <p>Three ICPs reconciled to the incorrect NSP.</p> <p>Some submission inaccuracies were identified which have not been submitted within the 14-month revision cycle resulting in corrections not being settled to the market.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Three times</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	<p>The controls are rated as moderate as they will mitigate risk most of the time but there is room for improvement.</p> <p>The issue relating to content of the aggregates file is an error in the code, Paua is providing submission information as expected.</p> <p>The audit risk rating is low as the volume of ICPs affected will have a very minor impact to the market.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
HHR Corrected and included in submissions where possible.		1/5/2020	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
All breaches were old. Our current system is proving robust.		1/5/2020	

## 12. SUBMISSION COMPUTATION

### 12.1. Daylight saving adjustment (Clause 15.36)

#### Code reference

Clause 15.36

#### Code related audit information

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

#### Audit observation

Data processes for AMS (NGCM) and IntelliHUB Ltd (MTRX) were reviewed as part of their MEP audit. Submissions for periods with daylight savings changes were reviewed.

#### Audit commentary

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

The “trading period run on” technique is used for daylight saving adjustment. This was confirmed by checking submission data for the beginning and end of daylight savings. The correct number of trading periods were recorded.

#### Audit outcome

Compliant

### 12.2. Creation of submission information (Clause 15.4)

#### Code reference

Clause 15.4

#### Code related audit information

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

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

#### Audit observation

Processes to ensure that submissions are accurate were reviewed.

HHR submissions were checked in **section 11.4**, and correction processes were checked in **section 8.2**.

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

### Audit commentary

Submissions are reviewed prior to submission, these checks are discussed in **sections 2.1** and **9.6**.

Examination of the correction process found that the automated estimation process was inserting a flat interval pattern which did not match the midnight read in all instances. This is recorded as non-compliance. Paua have replaced this coding and the estimation process now correctly considers the surrounding data and similar periods. I rechecked the three examples of corrections in Foxworks post the coding change and confirmed that it is working as expected. All estimated data matched to the midnight reads and was within the 10% percentage threshold.

This also affected the estimation process detailed in **section 9.4**. I rechecked three estimations in Foxworks and confirmed that it is working as expected. All estimated data matches to the midnight reads and is within the 10% percentage threshold.

The accuracy of the HHR aggregates and HHR volumes files is discussed in **section 11.4**. The analysis of the ICP day's missing report found some inaccuracies including volumes that should have been submitted for ICP 0000017837TR280 for September 2018, but this is now beyond the revision cycle. This is recorded as non-compliance below.

The last audit found that revision data was not being routinely submitted unless it was considered to be material. In this audit I found that revisions are still not routinely being carried out. Some corrections identified in the last audit were not submitted within the 14-month revision cycle and therefore these will not flow through to the market. This is recorded as non-compliance below and in **sections 2.1, 11.4** and **12.7**.

As described in **section 1.6**, an alleged breach was recorded for late submission of initial submission data for the month of May 2019. There have been no further occurrences since and Paua have revised their process to ensure that submissions are completed.

### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 12.2 With: Clause 15.4  From: 01-Oct-18 To: 01-Dec 19	One late submission file was provided in June 2019 for May 2019 Ri. Revisions not routinely being submitted.  Some submission inaccuracies were identified which have not been submitted within the 14-month revision cycle resulting in corrections not being settled to the market.  Potential impact: Low Actual impact: Low Audit history: Once Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	The controls are rated as moderate as they will mitigate risk most of the time but there is room for improvement.  The audit risk rating is low as the volume of ICPs affected will have a very minor impact to the market.		
Actions taken to resolve the issue		Completion date	Remedial action status
Submission was submitted.		1/5/2020	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
See comments above regarding more regular submissions.		1/5/2020	

### 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 processes to ensure that submissions are accurate were discussed and observed.

### Audit commentary

Paua has validation processes to ensure that aggregation factors and volumes reported are correct.

- Aggregation factor validation processes are discussed in **section 2.1**.
- Volume validation processes are discussed in **section 9.6**.

This audit found three ICPs that were reconciled to the incorrect NSP as the NSP change wasn't processed correctly. I note all were within the same balancing area so the impact on submission is minor. This is recorded as non-compliance below and in **sections 2.1, 11.4 and 12.7**.

In the last audit an NSP change from HAY0331 to HAY0111 for ICP 1001147041CK514 was not processed from the correct date, resulting in volumes and aggregates being reported against an incorrect NSP for some days in October and November 2017. Paua's system had been corrected, but revision consumption was not submitted within the 14-month revision cycle. This is recorded as non-compliance in **sections 11.4 and 12.7**.

### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 12.3 With: Clause 15.5  From: 01-Oct-17 To: 01-May-19	Three ICPs submitted against the incorrect NSP.  Potential impact: Low  Actual impact: Low  Audit history: None  Controls: Moderate  Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	The controls are rated as moderate as they will mitigate risk most of the time but there is room for improvement.  The audit risk rating is low, as this affected only a small number of ICPs.		
Actions taken to resolve the issue		Completion date	Remedial action status
See comments that appear at least twice previously regarding these three ICP.		1/5/2020	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
See comments that appear at least twice previously regarding these three ICP.		1/5/2020	

## 12.4. Grid owner volumes information (Clause 15.9)

### Code reference

Clause 15.9

### Code related audit information

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

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

### Audit observation

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

### Audit commentary

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

### Audit outcome

Not applicable

## 12.5. Provision of NSP submission information (Clause 15.10)

### Code reference

Clause 15.10

### Code related audit information

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

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

### Audit observation

A registry list was reviewed to confirm Paua does not own any local or embedded networks.

### Audit commentary

Paua is not required to provide NSP submission information.

### Audit outcome

Not applicable

## 12.6. Grid connected generation (Clause 15.11)

### Code reference

Clause 15.11

### Code related audit information

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

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

### Audit observation

The registry list and NSP table were reviewed.

### Audit commentary

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

### Audit outcome

Not applicable

## 12.7. Accuracy of submission information (Clause 15.12)

### Code reference

Clause 15.12

### Code related audit information

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

### Audit observation

Processes to ensure the accuracy of submission information were reviewed, and the submission data itself was reviewed in **sections 11.2, 11.3 and 11.4**.

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

### Audit commentary

Examination of the correction process found that the automated estimation process was inserting a flat interval pattern which did not match the midnight read in all instances. This is recorded as non-compliance. Paua have replaced this coding and the estimation process now correctly considers the surrounding data and similar periods. I rechecked the three examples of corrections in Foxworks post the coding change and confirmed that it is working as expected. All estimated data matched to the midnight reads and was within the 10% percentage threshold.

This also affected the estimation process detailed in **section 9.4**. I rechecked three estimations in Foxworks post the coding change and confirmed that it is working as expected. All estimated data matched to the midnight reads and was within the 10% percentage threshold.



The estimated read did not match the read in Foxworks for ICP 0000127676TRF2B. Paua has corrected this since the audit and the last read now matches the read in the CS file. This is recorded as non-compliance below and in **sections 2.1, 4.3 and 4.16**.

The last audit found that revision data was not being routinely submitted unless it was considered to be material. In this audit I found that revisions are still not routinely being carried out. Some corrections identified in the last audit were not submitted within the 14-month revision cycle and therefore these will not flow through to the market. This is recorded as non-compliance below and in **sections 2.1, 11.4 and 12.2**. Due to the small mostly residential customer base the effect to the market is minimal. Paua has now added functionality that prompts the operator for the revision files required for each submission.

There was one breach allegation recorded by the Electricity Authority between October 2018 and March 2020:

Reference	Code	Summary	Severity	Status	Result
1910GIVE1	Part 15 clause 15.4(1)	Paua to the People Limited (GIVE) failed to submit data to the reconciliation manager by 16:00 on 7th June 2019 (BD) 4 in breach of Part 15.4 (1) of the Code. GIVE didn't realise their submission didn't go through on the file checker on BD4.	low	closed	early closure

The following submission accuracy issues were identified:

As described in **section 11.2** and **11.4**, NSP changes were not always managed correctly resulting in volumes being reconciled to the incorrect NSP. I note they are all within the same balancing area so the impact on submission is minimal. I recommend in **section 11.2**, that the ICP missing report is checked to ensure that all expected changes have been captured. This is recorded as non-compliance below and in **sections 2.1, 11.4 and 12.3**.

#### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 12.7 With: Clause 15.12  From: 01-Oct-17 To: 31-Dec-19	Some late revision files were provided. Some revision files were not provided within the 14-month revision period resulting in corrections not being settled in the market. Some incorrect submission data was provided. Potential impact: Low Actual impact: Low Audit history: Twice Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	The controls are rated as moderate as they mitigate risk most of the time but there is room for improvement. The audit risk rating is low as the volume of ICPs affected will have a very minor impact to the market.		
Actions taken to resolve the issue		Completion date	Remedial action status
See comments that appear at least twice previously regarding frequency of submissions		1/5/2020	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
See comments that appear at least twice previously regarding frequency of submissions		1/5/2020	

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

### Code reference

Clause 4 Schedule 15.2

### Code related audit information

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

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

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

### Audit observation

Review of the registry list for 04/10/18 to 06/04/20 confirmed that all active ICPs had submission type HHR, and HHR or AMI metering installed.

### Audit commentary

Estimates are only applied where actual readings are not available, or estimate readings have been applied for switching purposes.

Due to the nature of the AMI read process it is highly unlikely reads that have not been able to be retrieved for the previous 14 months, would be retrieved after more than 14 months. Paua could not recall any ICPs where readings became available after revision 14; therefore all estimates were effectively permanent by revision 14.

### 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 for each ICP must comprise the following:*

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

### Audit observation

Aggregation and content of reconciliation submissions was reviewed.

### Audit commentary

Compliance with this clause was assessed:

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

### Audit outcome

Compliant

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

### Code reference

*Clause 3 Schedule 15.3*

### Code related audit information

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

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

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

### Audit observation

Review of the registry list for 04/10/18 to 06/04/20 confirmed that all active ICPs had submission type HHR, and HHR or AMI metering installed.

### Audit commentary

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

### Audit outcome

Not applicable

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

##### Code reference

Clause 4 and 5 Schedule 15.3

##### Code related audit information

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

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

##### Audit observation

Review of the registry list for 04/10/18 to 06/04/20 confirmed that all active ICPs had submission type HHR, and HHR or AMI metering installed.

##### Audit commentary

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

##### Audit outcome

Not applicable

#### 12.12. Forward estimate process (Clause 6 Schedule 15.3)

##### Code reference

Clause 6 Schedule 15.3

##### Code related audit information

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

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

##### Audit observation

Review of the registry list for 04/10/18 to 06/04/20 confirmed that all active ICPs had submission type HHR, and HHR or AMI metering installed.

##### Audit commentary

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

##### Audit outcome

Not applicable

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

#### Code reference

Clause 7 Schedule 15.3

#### Code related audit information

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

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

#### Audit observation

The registry list for 04/10/18 to 06/04/20 was reviewed to identify all ICPs which had a profile change.

#### Audit commentary

No profile changes occurred during the period.

#### Audit outcome

Compliant

## 13. SUBMISSION FORMAT AND TIMING

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

#### Code reference

*Clause 8 Schedule 15.3*

#### Code related audit information

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

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

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

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

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

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

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

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

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

#### Audit observation

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

Aggregation of HHR volumes is discussed in **section 11.4**.

### Audit commentary

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

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

This audit found non-compliance for aggregating consumption against the incorrect NSP for three ICPs.

### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 13.1 With: Clause 8 Schedule 15.3  From: 01-Sept-18 To: 01-May 19	Three ICPs reconciled to the incorrect NSP.  Potential impact: Low  Actual impact: Low  Audit history: None  Controls: Moderate  Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	The controls are rated as moderate as they will mitigate risk most of the time but there is room for improvement.  The audit risk rating is low as the ICPs were all within the same balancing area therefore the impact to the market will be minor.		
Actions taken to resolve the issue		Completion date	Remedial action status
These three ICP have now appeared in at least four breaches all to do with this issue. Please see comments above		1/5/2020	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
These three ICP have now appeared in at least four breaches. Please see comments above		1/5/2020	



### 13.2. Reporting resolution (Clause 9 Schedule 15.3)

#### Code reference

*Clause 9 Schedule 15.3*

#### Code related audit information

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

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

#### Audit observation

I reviewed four AV090 half hour volumes reports and four AV140 half hour aggregates reports to confirm how rounding occurs.

#### Audit commentary

Review of four AV090 and four AV140 reports confirmed that submission information is appropriately rounded to two decimal places.

#### Audit outcome

Compliant

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

#### Code reference

*Clause 10 Schedule 15.3*

#### Code related audit information

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

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

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

#### Audit observation

Review of the registry list for 04/10/18 to 06/04/20 confirmed that all active ICPs had submission type HHR, and HHR or AMI metering installed.

#### Audit commentary

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

#### Audit outcome

Not applicable

## CONCLUSION

This audit identified some new issues and Paua have already made improvements to their system as a result of this audit.

### Registry Management and Switching

Paua's registry management processes are robust and the overall data accuracy was found to be high. There was an issue with the processing of NSP changes during the audit period which caused some ICPs to be settled to the incorrect NSP over a number of revisions due to human error. Paua are now clear on this and have updated their system so such changes are easily managed.

Switching continues to be undertaken directly in the registry. There were a number of switch breaches recorded and this was due to a misunderstanding of the switching requirements. I have shared the Veritek switching diagrams which sets out the switch timings. Paua understands these and plans to automate the switching process and understand that this will require a material change audit.

### Data Collection and Reconciliation

Paua continues to supply HHR AMI customers only, and relies on AMI reads provided by MEPs. Paua's initial submission data is usually highly accurate, because it is based on AMI data. Paua was developing a new system and a material change audit was in progress for this, but this is no longer being progressed. This audit found that some of that development had been deployed and was not working as expected, specifically the automated estimation process. Paua have removed this code and replaced it with their own to rectify this while this audit was undertaken. I have reviewed and confirmed that it is now working as expected. Paua understands that a material change should have been completed prior to deployment of any such changes and will undertake a material change prior to any further changes being made.

The last audit found that revision data was not being routinely submitted unless it was considered to be material. In this audit I found that revisions were still not routinely being carried out. Some corrections identified in the last audit were not submitted within the 14-month revision cycle and therefore these will not flow through to the market. Due to the small, mostly residential customer base the effect to the market is minimal. Paua has now added functionality that prompts the operator for the revision files required for each submission.

This audit identified 20 non-compliances and makes two recommendations. The audit risk rating is 34, which results in an indicative audit frequency of 12 months. I have considered this and Paua's responses and agree with this recommendation.

## PARTICIPANT RESPONSE

Thank you for our audit.

Our calculation is that ~8 points for an error in our estimation engine, ~7 points for not doing enough submission revisions and 6 points for having three residential ISP on an incorrect NSP. We believe that all these issues have now been resolved and are not reflective of our systems.