

ELECTRICITY INDUSTRY PARTICIPATION CODE  
RECONCILIATION PARTICIPANT AUDIT REPORT



For

VECTOR LIMITED  
NZBN: 9429039215109

Prepared by: Tara Gannon

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## EXECUTIVE SUMMARY

This Electricity Industry Participation Code Reconciliation Participant audit was performed at the request of **Vector Limited (Vector)**, to support application for certification in accordance with clause 5 of Schedule 15.1. The audit was conducted in accordance with the Guideline for Reconciliation Participant Audits V7.1.

Vector created interconnection point WHA0221VECTNP between its own network and the **Counties Power** network on 1 May 2023. It is a backup supply point and will be used where there is a planned or unplanned outage on one of the networks and a backup electricity supply is needed.

**Advanced Metering Assets Limited (AMCI)** is the MEP for WHA0221VECTNP, and the meter is certified. **Accucal** performed meter data collection for May 2023 with permission from Vector and AMCI, and **AMS** has performed meter data collection from June 2023 onwards.

**John Candy Consulting** completes data validation and reconciliation submissions as Vector's agent.

The agent audit report for AMS will be submitted with this audit. John Candy Consulting and Accucal do not have current agent audit reports. The functions performed by John Candy Consulting were checked as part of this audit and found to be compliant, and the functions performed by Accucal were checked by Steve Woods of Veritek Limited during Accucal's MEP audit and found to be compliant.

I confirmed the following as part of this audit:

- no estimates or corrections have been required during the audit period,
- no defective meters have been identified during the audit period, and
- no clock synchronisation errors outside the allowable tolerances have occurred during the audit period.

Vector had one alleged breach relevant to the scope of this audit. 2307VECT1 was a self-reported alleged breach of Part 15 clause 15.38 and Part 15 Schedule 15.1 clause 2A(1)(b), and fact finding is underway. Data collection occurred for May and June 2023 without Vector being approved as a reconciliation participant. Vector had applied for an exemption from becoming a reconciliation participant which following several communications with the Authority resulted in the decision to become a reconciliation participant, and withdrawal of the exemption application. This caused the delay for Vector's approval process as a reconciliation participant. A desktop audit for application to trade was completed on 30 June 2023, and this reconciliation participant audit has been completed within six months of beginning trading.

Apart from this alleged breach, compliance was confirmed with the code, and I recommend that the next audit is completed in 24 months, which is the maximum period allowed under the code.

## AUDIT SUMMARY

### NON-COMPLIANCES

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			Nil				
Future Risk Rating						0	

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

### RECOMMENDATIONS

Subject	Section	Description	Recommendation
		Nil	

### ISSUES

Subject	Section	Description	Issue
		Nil	

## 1. ADMINISTRATIVE

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

#### Code reference

*Section 11 of Electricity Industry Act 2010.*

#### Code related audit information

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

#### Audit observation

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

#### Audit commentary

Not applicable

### 1.2. Structure of Organisation

Not applicable

### 1.3. Persons involved in this audit

Auditor:

Name	Role	Company
Tara Gannon	Auditor	Provera

Personnel assisting in this audit were:

Name	Title	Company
Monica Choy	Senior Regulatory & Pricing Partner	Vector Limited
Aidan Sweetman	Commercial & Industrial Metering Operations Manager	Vector Limited
John Candy	Director	John Candy Consulting
Chrissy Burrows	Consultant	Momentous Consulting Limited
Steve Woods	Managing Director	Veritek Limited

## 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

Agents were identified, and their reports were evaluated as part of this audit.

### Audit commentary

AMCI is the MEP for WHA0221VECTNP. Accucal performed meter data collection for May 2023, and AMS has performed meter data collection from June 2023 onwards.

John Candy Consulting completes data validation and reconciliation submissions as Vector's agent.

## 1.5. Hardware and Software

### Accucal systems

The EDM I proprietary system EziView is used to collect data.

### AMS systems

AMS systems are discussed in their agent audit report.

### John Candy Consulting systems

The Access Database (RM Tool) is provided and run by John Candy Consulting, along with Windows 10 and Microsoft Excel. Online backups are made to OneDrive. Access to systems is restricted using logins and passwords.

## 1.6. Breaches or Breach Allegations

Vector had one alleged breach relevant to the scope of this audit. 2307VECT1 was a self-reported alleged breach of Part 15 clause 15.38 and Part 15 Schedule 15.1 clause 2A(1)(b), and fact finding is underway.

Data collection occurred for May and June 2023 without Vector being approved as a reconciliation participant. Vector had applied for an exemption from becoming a reconciliation participant, instead of approval to become a reconciliation participant which caused the delay in being approved. A desktop audit was completed on 30 June 2023, and this reconciliation participant audit will be completed within six months of beginning trading.



## 1.7. NSP Data

The network supply points table was examined:

NSP POC	Description	Parent POC	Parent Ntwk	Balancing Area	Ntwk Type	Start Date	MEP
WHA0221	461 East Coast Rd Whakatiwai	TAK0331	VECT	AUCKLNDVECTG	NP	1 May 2023	AMCI

## 1.8. Authorisation Received

Authorisation was provided by Vector.

## 1.9. Scope of Audit

This Electricity Industry Participation Code Reconciliation Participant audit was performed at the request of Vector, to support their application for certification in accordance with clause 5 of schedule 15.1. The audit was conducted in accordance with the Guideline for Reconciliation Participant Audits version 7.1.

Vector created interconnection point WHA0221VECTNP between its own network and the Counties Power network on 1 May 2023. It is a backup supply point and will only be used where there is a planned or unplanned outage on one of the networks and a backup electricity supply is needed. Certification is required to collect data and submit NSP volumes for WHA0221VECTNP.

The scope of the audit is shown in the table below:

Tasks Requiring Certification Under Clause 15.38(1) of Part 15	Agents Involved in Performance of Tasks
(b) Gathering and storing raw meter data	Accucal - May 2023 AMS - June 2023 onwards John Candy Consulting
(c)(i) Creation and management of HHR volume information	John Candy Consulting
(e) Provision of submission information for reconciliation.	John Candy Consulting

The agent audit report for AMS will be submitted with this audit. John Candy Consulting and Accucal do not have current agent audit reports. The functions performed by John Candy Consulting were checked as part of this audit and found to be compliant, and the functions performed by Accucal were checked by Steve Woods of Veritek Limited during Accucal's MEP audit and found to be compliant.

## 1.10. Summary of previous audit

A copy of the "reconciliation participant application to trade pre-trading desktop audit report" prepared by Chrissy Burrows of Momentous Consulting Ltd on 30 June 2023 was provided and reviewed. The audit did not record any non-compliances or make any recommendations.

## 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 reviewed.

#### Audit commentary

I did not identify any incomplete, incorrect, or misleading information. Any instances of incorrect, incomplete, and misleading information are resolved as they arise.

#### Audit outcome

Compliant

### 2.2. Provision of information (Clause 15.35)

#### Code reference

Clause 15.35

#### Code related audit information

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

#### Audit observation

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

#### Audit commentary

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

#### Audit outcome

Compliant

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

#### Code reference

Clause 20 Schedule 15.2

#### Code related audit information

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

#### Audit observation

Data transmission methods were checked.

#### Audit commentary

Meter data is transferred to John Candy Consulting as password protected zip files.

#### 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 checked.

#### Audit commentary

Compliance was recorded in the AMS agent audit report and during Accucal's audit.

John Candy Consulting's system records compliant audit trails. No changes to data occurred during the audit period, so no changes were available for review.

#### 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

Not applicable

#### Audit commentary

Not applicable

#### Audit outcome

Not applicable

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

#### Code reference

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

#### Code related audit information

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

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

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

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

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

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

### Audit observation

I discussed Vector's policy in relation to allowing access to metering and if any requests had been received during the audit period.

### Audit commentary

Arrangements for access to metering are completed as necessary. There have been no cases where access was requested but could not be arranged.

### 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

Metering is located at the point of connection.

### Audit commentary

Metering is located at the point of connection.

### Audit outcome

Compliant

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

### Code reference

*Clause 11.15B*

### Code related audit information

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

- the Authority to assign the rights and obligations of the trader under the contract to another trader if the trader commits an event of default under paragraph (a) or (b) or (f) or (h) of clause 14.41 (clause 11.15B(1)(a)); and*

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

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

**Audit observation**

Not applicable

**Audit commentary**

Not applicable

**Audit outcome**

Not applicable

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

**Code reference**

*Clause 10.32*

**Code related audit information**

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

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

**Audit observation**

Not applicable

**Audit commentary**

Not applicable

**Audit outcome**

Not applicable

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

### Code reference

Clause 10.33(1)

### Code related audit information

A trader 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:
  - o the trader is recorded in the registry as the trader responsible for the ICP or has an arrangement with the customer and initiates a switch within 2 business days of electrical connection,
  - o if the ICP has metered load, 1 or more certified metering installations are in place,
  - o if the ICP has not previously been electrically connected, the relevant distributor has given written approval of the temporary electrical connection.

### Audit observation

Not applicable

### Audit commentary

Not applicable

### Audit outcome

Not applicable

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

### Code reference

Clause 10.33A(1)

### Code related audit information

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

- 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:
  - o the trader is recorded in the registry as the trader responsible for the ICP or has an arrangement with the customer and initiates a switch within 2 business days of electrical connection,
  - o if the ICP has metered load, 1 or more certified metering installations are in place,
  - o if the ICP has not previously been electrically connected, the relevant distributor has given written approval of the electrical connection.

### Audit observation

Not applicable

#### Audit commentary

Not applicable

#### Audit outcome

Not applicable

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

#### Code reference

Clause 11.16

#### Code related audit information

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

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

#### Audit observation

Not applicable

#### Audit commentary

Not applicable

#### Audit outcome

Not applicable

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

#### Code reference

Clause 10.36

#### Code related audit information

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

#### Audit observation

The network supply points table was examined. The specific details are recorded in **section 1.7**.

#### Audit commentary

AMCI is recorded as the MEP for the interconnection point on the NSP mapping table and have accepted responsibility as the MEP.

Initially the connection point was thought to be a GXP and AMCI agreed to be the MEP. Following provisioning the meter, AMCI was advised by Vector that the GXP was actually an interconnection point, and the original ICP was created in error.

It appears that Vector assumed that AMCI would automatically accept responsibility despite this change of connection type, but AMCI first required confirmation of which reconciliation participant or agent



data should be issued to, and whether that party had approval to operate as a reconciliation participant. Once Vector confirmed that the data should be delivered to John Candy Consulting and they were approved to act as a reconciliation participant, AMCI formally accepted responsibility for the new interconnection point. This approval process was delayed by Vector initially applying for an exemption from being a reconciliation participant. Following discussions with the Authority, the exemption application was later withdrawn so that Vector could apply to become a certified reconciliation participant.

Compliance is recorded because AMCI have backdated their acceptance to the NSP start date, and an agreement was in place with AMCI prior to the start date although the connection type was later changed.

#### **Audit outcome**

Compliant

### 2.14. Connecting ICPs then withdrawing switch (Clause 10.33A(5))

#### **Code reference**

*Clause 10.33B*

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

*If a trader connects an ICP it is in the process of switching and the switch does not proceed or is withdrawn the trader must:*

- *restore the disconnection, including removing any bypass and disconnecting using the same method the losing trader used,*
- *reimburse the losing trader for any direct costs incurred.*

#### **Audit observation**

Not applicable

#### **Audit commentary**

Not applicable

#### **Audit outcome**

Not applicable

### 2.15. Electrical disconnection of ICPs (Clause 10.33B)

#### **Code reference**

*Clause 10.33B*

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

*Unless the trader is recorded in the registry or is meeting its obligation under 10.33A(5) it must not disconnect or electrically disconnect the ICP or authorise the metering equipment provider to disconnect or electrically disconnect the ICP.*

#### **Audit observation**

Not applicable

#### **Audit commentary**

Not applicable

**Audit outcome**

Not applicable

**2.16. Removal or breakage of seals (Clause 48(1C), 48 (1D), 48 (1E), 48 (1F) of Schedule 10.7)**

**Code reference**

*Clause 48(1C), 48 (1D), 48 (1E), 48 (1F) of Schedule 10.7*

**Code related audit information**

*A trader can remove or break a seal without authorisation from the MEP to:*

- *reset a load control switch, bridge or un-bridge a load control switch – if the load control switch does not control a tome block meter channel:*
- *electrically connect load or generation, of the load or generation has been disconnected at the meter,*
- *electrically disconnect load or generation, if the trader has exhausted all other appropriate methods of electrical disconnection,*
- *bridge the meter.*

*A trader that removes or breaks a seal in this way must:*

- *ensure personal are qualified to remove the seal and perform the permitted work and they replace the seal in accordance with the Code,*
- *replace the seal with its own seal,*
- *have a process for tracing the new seal to the personnel,*
- *update the registry (if the profile code has changed),*
- *notify the metering equipment provider.*

**Audit observation**

Not applicable

**Audit commentary**

Not applicable

**Audit outcome**

Not applicable

**2.17. Meter bridging (Clause 10.33C and 2A of Schedule 15.2)**

**Code reference**

*Clause 10.33C and 2A of Schedule 15.2*

**Code related audit information**

*A trader, or a distributor or MEP which has been authorised by the trader, may only electrically connect an ICP in a way that bypasses a meter that is in place (“bridging”) if, despite best endeavours:*

- *the MEP is unable to remotely electrically connect the ICP,*
- *the MEP cannot repair a fault with the meter due to safety concerns,*
- *the consumer will likely be without electricity for a period which would cause significant disadvantage to the consumer.*

*If the trader bridges a meter, the trader must:*

- *determine the quantity of electricity conveyed through the ICP for the period of time the meter was bridged,*
- *submit that estimated quantity of electricity to the reconciliation manager,*
- *within one business day of being advised that the meter is bridged, notify the MEP that they are required to reinstate the meter so that all electricity flows through a certified metering installation.*

*The trader must determine meter readings as follows:*

- *by substituting data from an installed check meter or data storage device*
- *if a check meter or data storage device is not installed, by using half hour data from another period where the trader considers the pattern of consumption is materially similar to the period during which the meter was bridged,*
- *if half hour data is not available, a non-half hour estimated reading that the trader considers is the best estimate during the bridging period must be used.*

**Audit observation**

Not applicable

**Audit commentary**

Not applicable

**Audit outcome**

Not applicable

**2.18. Use of ICP identifiers on invoices (Clause 11.30)**

**Code reference**

*Clause 11.30*

**Code related audit information**

*Each trader must ensure the relevant ICP identifier is printed on every invoice or document relating to the sale of electricity.*

**Audit observation**

Not applicable

**Audit commentary**

Not applicable

**Audit outcome**

Not applicable

## 2.19. Provision of information on dispute resolution scheme (Clause 11.30A)

### Code reference

Clause 11.30A

### Code related audit information

*A retailer must provide clear and prominent information about Utilities Disputes:*

- *on their website*
- *when responding to queries from consumers*
- *in directed outbound communications to consumers about electricity services and bills.*

*If there are a series of related communications between the retailer and consumer, the retailer needs to provide this information in at least one communication in that series.*

### Audit observation

Not applicable

### Audit commentary

Not applicable

### Audit outcome

Not applicable

## 2.20. Provision of information on electricity plan comparison site (Clause 11.30B)

### Code reference

Clause 11.30B

### Code related audit information

*A retailer that trades at an ICP recorded on the registry must provide clear and prominent information about Powerswitch:*

- *on their website*
- *in outbound communications to residential consumers about price and service changes*
- *to residential consumers on an annual basis*
- *in directed outbound communications about the consumer's bill.*

*If there are a series of related communications between the retailer and consumer, the retailer needs to provide this information in at least one communication in that series.*

### Audit observation

Not applicable

### Audit commentary

Not applicable

### Audit outcome

Not applicable

### **3. MAINTAINING REGISTRY INFORMATION**

This audit report is for NSP gate volumes only. No ICPs are traded therefore this section has been deleted.

### **4. PERFORMING CUSTOMER AND EMBEDDED GENERATOR SWITCHING**

This audit report is for NSP gate volumes only. No ICPs are traded therefore this section has been deleted.

### **5. MAINTENANCE OF UNMETERED LOAD**

This audit report is for NSP gate volumes only. No ICPs are traded therefore this section has been deleted.

## 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

Not applicable

#### Audit commentary

Not applicable

#### Audit outcome

Not applicable

### 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**

Not applicable

#### **Audit commentary**

Not applicable

#### **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**

Not applicable

#### **Audit commentary**

Not applicable

#### **Audit outcome**

Not applicable

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

#### **Code reference**

*Clause 10.43(2) and (3)*

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

*If a participant becomes aware of an event or circumstance that leads 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 for defective metering were checked.

### Audit commentary

Accucal, AMS and John Candy Consulting support compliance by advising of any potential data accuracy issues identified during data validation. No defective meters were identified during the audit period.

### 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

Processes for clock synchronisation were checked.

The data for May 2023 was collected by Accucal on the instruction of Vector for the WHA0221VECTNP interconnection point. Data from June 2023 onwards has been collected by AMS.

### Audit commentary

The data for WHA0221VECTNP was collected within the maximum interrogation cycle, and there have been no clock synchronisation errors outside permissible limits during the audit period.



## Accucal

Accucal collects data as an MEP for a small number of points of connection. WHA0221VECTNP is the only point of collection where Accucal has collected data as an agent to a reconciliation participant.

The EDM I proprietary system EziView was used to collect the data. Accucal's server is synchronised against an internet time source prior to data collection. During each interrogation, the data logger internal clock is compared with the data collection system clock, and any time errors are assessed individually. If they are outside the allowable threshold, a correction is made. There was no time error for the meter at WHA0221VECTNP for May 2023.

When time errors less than or equal to 60 seconds are detected, the data is not corrected. The entire adjustment occurs within the half hour that the time is adjusted. Notification of time errors outside those stipulated in Table 1 will be made to reconciliation participants if they require this reporting.

The interpretation of this clause was discussed. The wording of the clause is as follows:

*"If a time error...is greater than the applicable time error set out in Table 1 [the participant must] correct any affected raw meter data."*

In the unlikely scenario of clocks being fast by more than 30 minutes, the data will be downloaded prior to time synchronisation taking place to ensure data is not over written.

It was confirmed during Accucal's audit that clock synchronisation occurs during manual data collection.

## AMS

Compliance is recorded in the AMS agent audit report.

## Audit outcome

Compliant

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

### Code reference

*Clauses 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**

Not applicable

#### **Audit commentary**

Not applicable

#### **Audit outcome**

Not applicable

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

#### **Code reference**

*Clause 6 Schedule 15.2*

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

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

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

#### **Audit observation**

Not applicable

#### **Audit commentary**

Not applicable

#### **Audit outcome**

Not applicable

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

#### **Code reference**

*Clause 7(1) and (2) Schedule 15.2*

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

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

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

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

#### **Audit observation**

Not applicable

#### **Audit commentary**

Not applicable

#### **Audit outcome**

Not applicable

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

#### **Code reference**

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

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

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

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

#### **Audit observation**

Not applicable

#### **Audit commentary**

Not applicable

#### **Audit outcome**

Not applicable

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

#### **Code reference**

*Clause 9(1) and (2) Schedule 15.2*

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

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

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

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

#### **Audit observation**

Not applicable

#### **Audit commentary**

Not applicable

#### Audit outcome

Not applicable

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

#### Code reference

Clause 10 Schedule 15.2

#### Code related audit information

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

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

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

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

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

#### Audit observation

Not applicable

#### Audit commentary

Not applicable

#### 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

Processes for HHR data collection were checked.

The data for May 2023 for was collected by Accucal on the instruction of Vector for the WHA0221VECTNP interconnection point. Data from June 2023 onwards has been collected by AMS.

#### Audit commentary

Actual readings were obtained for all trading periods from the access services interface for May 2023 to July 2023.

#### Accucal

HHR data was collected from the services access interface as required by this clause.

## AMS

Compliance is recorded in the AMS agent audit report.

### 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

Processes for HHR data collection were checked.

### Audit commentary

#### Accucal

The walkthrough of the data collection process confirmed the following information is collected during each automated interrogation of HHR metering:

- the unique identifier (serial no) of the meter or data logger,
- the interrogation time,
- the system time and the data logger time,
- the half-hour metering information for each trading period, and
- events log.

All possible events are downloaded and checked as part of the data collection process. There were no relevant events for WHA0221VECTNP.

A data collection summary sheet is sent for all points of connection. This includes the data and time of the interrogation, any events, the system and data logger times and whether time correction occurred.

## AMS

Compliance is recorded in the AMS agent audit report.

### 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

Processes for HHR data collection were checked.

### Audit commentary

#### Accucal

The walkthrough of the data collection process confirmed the following information is collected during each automated interrogation of HHR metering:

- the unique identifier (serial no) of the meter or data logger,
- the interrogation time,
- the system time and the data logger time,
- the half-hour metering information for each trading period, and
- events log.

All possible events are downloaded and checked as part of the data collection process. There were no relevant events for WHA0221VECTNP.

A data collection summary sheet is sent for all points of connection. This includes the data and time of the interrogation, any events, the system and data logger times and whether time correction occurred.

## AMS

Compliance is recorded in the AMS agent audit report.

### 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

Processes for trading period duration were checked.

#### Audit commentary

There have been no clock synchronisation errors outside permissible limits during the audit period.

#### Accucal

Trading period duration is managed through the clock synchronisation process, discussed in **section 6.5**.

#### AMS

Compliance is recorded in the AMS agent audit report.

#### Audit outcome

Compliant

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

#### Code reference

Clause 18 Schedule 15.2

#### Code related audit information

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

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

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

#### Audit observation

Processes to archive and retain raw meter reading data were checked.

#### Audit commentary

#### Accucal

All data is archived in accordance with these clauses for a period more than 48 months. This was confirmed by viewing raw meter data from 2019 for other installations.

Password protection is in place to ensure raw meter data cannot be accessed by unauthorised personnel. I observed login processes during the audit and noted password protection was in place for systems used to retrieve and store raw meter data.

Raw data is never modified, a secure version of the raw data is saved, and any corrections are made to a working copy, which is also saved with a log of any corrections. Data from EDM1 meters is “appended”,

which means all data from the time the meter was first set up is collected. Accucal selects the relevant data for the month and sends this data, not the entire raw data file.

#### **AMS**

Compliance is recorded in the AMS agent audit report.

#### **John Candy Consulting**

John Candy Consulting intends to retain all raw meter reading files for at least four years as required by the Code.

#### **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**

Not applicable

#### **Audit commentary**

Not applicable

#### **Audit outcome**

Not applicable



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

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

#### Code reference

Clause 19(1) Schedule 15.2

#### Code related audit information

*If 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 by the second meter reading (even if the second meter reading is at a different date)*

*19(1)(c) - 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

Not applicable

#### Audit commentary

Not applicable

#### 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

Correction processes were checked.

### Audit commentary

Actual data has been obtained for all trading periods and no corrections have been required.

AMS or John Candy Consulting will calculate any corrections required. Compliance is recorded in the AMS audit report, and John Candy Consulting will prepare corrections based on the best information available.

### Audit outcome

Compliant

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

### Code reference

*Clause 19(3) Schedule 15.2*

### Code related audit information

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

### Audit observation

Not applicable

### Audit commentary

Not applicable

### Audit outcome

Not applicable

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

### Code reference

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

### Code related audit information

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

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

*The journal must contain the following:*

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

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

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

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

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

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

#### **Audit observation**

Correction processes were checked.

#### **Audit commentary**

Actual data has been obtained for all trading periods and no corrections have been required.

Compliance is recorded in the AMS agent audit report and during Accucal's audit.

John Candy Consulting's system records compliant audit trails. No changes to data occurred during the audit period, so no changes were available for review.

#### **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

Processes to identify readings were checked.

#### Audit commentary

Actual data has been obtained for all trading periods.

#### Accucal

Readings are clearly identified.

#### AMS

Compliance is recorded in the AMS agent audit report.

#### John Candy Consulting

John Candy Consulting's records whether data is actual or estimated at trading period level.

#### 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

Submission data is created by John Candy Consulting. The process to derive volumes was reviewed, and submissions to date were checked.

#### Audit commentary

Actual data has been obtained for all trading periods. I compared submission data to the raw meter data provided by Accucal and AMS for the May 2023 to July 2023 initial submissions and confirmed that volume information was derived from validated meter volumes.

#### 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 for deriving volume information must not be rounded or truncated from the stored data from the metering installation.*

#### Audit observation

Submission data is created by John Candy Consulting. The process to derive volumes was reviewed, and submissions to date were checked.

#### Audit commentary

I checked the process to create submission data by comparing the raw data meter data received to the NSP volumes submission for the May 2023 to July 2023 initial submissions. The data submitted matched the expected values and was calculated using the raw unrounded data. John Candy had correctly applied the compensation factors where data was provided by Accucal, and AMS had supplied data adjusted for the compensation factors. I compared data extracted by Accucal and AMS for June 2023 and confirmed that it was consistent.

#### 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

Correction processes were checked.

#### Audit commentary

Actual data has been obtained for all trading periods and no estimates have been required.

AMS or John Candy Consulting will calculate any estimates required. Compliance is recorded in the AMS audit report, and John Candy Consulting will prepare estimates based on the best information available.

#### Audit outcome

Compliant

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

### Code reference

Clause 16 Schedule 15.2

### Code related audit information

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

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

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

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

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

### Audit observation

Not applicable

### Audit commentary

Not applicable

### Audit outcome

Not applicable

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

### Code reference

Clause 17 Schedule 15.2

### Code related audit information

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

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

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

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

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

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

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

17(4)(f) - a review of the meter and data storage device event log for any event that could have affected the integrity of metering data,

*17(4)(g) – a review of the relevant metering data where there is an event that could have affected the integrity of the metering data.*

*If there is an event that could affect the integrity of the metering data (including events reported by MEPs but excluding where the MEP is responsible for investigating and remediating the event) the reconciliation must investigate and remediate any events.*

*If the event may affect the integrity or operation of the metering installation the reconciliation participant must notify the metering equipment provider.*

#### **Audit observation**

I reviewed the HHR data validation processes discussed in John Candy Consulting's RM submission processes v2.1.

#### **Audit commentary**

John Candy Consulting checks for missing data, invalid dates and times, unexpected zeros or consumption which is not aligned with historic patterns. Because of the nature of the interconnection point, it is difficult to detect consumption anomalies, and consumption is expected to be zero most of the time. No register readings are received from Accucal or AMS, so John Candy Consulting is unable to complete a sum-check.

John Candy Consulting confirmed that no meter events which could affect meter accuracy occurred during the audit period.

#### **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

Not applicable

#### Audit commentary

Not applicable

#### 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

Not applicable

#### Audit commentary

Not applicable

#### Audit outcome

Not applicable



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

#### Code reference

Clause 13.138

#### Code related audit information

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

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

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

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

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

#### Audit observation

Not applicable

#### Audit commentary

Not applicable

#### 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

Not applicable

#### Audit commentary

Not applicable

#### 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

Not applicable

#### Audit commentary

Not applicable

#### Audit outcome

Not applicable

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

#### Code reference

Clause 15.6

#### Code related audit information

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

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

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

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

#### Audit observation

Not applicable

#### Audit commentary

Not applicable

#### Audit outcome

Not applicable

### 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

Not applicable

#### Audit commentary

Not applicable

#### Audit outcome

Not applicable

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

#### Code reference

Clause 15.8

#### Code related audit information

*Using relevant volume information, each retailer or direct purchaser (excluding direct consumers) must deliver to the reconciliation manager its total monthly quantity of electricity consumed 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

Not applicable

#### Audit commentary

Not applicable

#### Audit outcome

Not applicable

## 12. SUBMISSION COMPUTATION

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

#### Code reference

Clause 15.36

#### Code related audit information

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

#### Audit observation

Accural data was only used for May 2023, and no daylight savings adjustments were required.

Daylight savings processes are covered in the AMS agent audit.

#### Audit commentary

Compliance is recorded in the AMS audit report.

#### 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

This clause refers to ICPs. This audit is for NSP volumes only.

#### Audit commentary

This clause refers to ICPs. This audit is for NSP volumes only.

#### Audit outcome

Compliant

### 12.3. Allocation of submission information (Clause 15.5)

#### Code reference

Clause 15.5

#### Code related audit information

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

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

#### Audit observation

Not applicable

#### Audit commentary

Not applicable

#### Audit outcome

Not applicable

### 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

Not applicable

#### Audit commentary

Not applicable

#### Audit outcome

Not applicable

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

### Code reference

Clause 15.10

### Code related audit information

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

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

### Audit observation

Process to provide NSP volumes submissions were reviewed.

### Audit commentary

I checked the process to create submission data by comparing the raw meter data received to the NSP volumes submission for the May 2023 to July 2023 initial submissions. The data submitted matched the expected values. John Candy had correctly applied the compensation factors where data was provided by Accucal, and AMS had supplied data adjusted for the compensation factors. I compared data extracted by Accucal and AMS for June 2023 and confirmed that it was consistent.

Revision submissions are provided if data has changed.

### Audit outcome

Compliant

## 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

Not applicable

### Audit commentary

Not applicable

### Audit outcome

Not applicable

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

### Code reference

Clause 15.12

### Code related audit information

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

### Audit observation

Process to provide NSP volumes submissions were reviewed.

### Audit commentary

Submission data is validated as described in **section 9.6**. Revision submissions are provided if data has changed. No corrections or estimations were required, and there have been no changes since data was originally submitted.

### Audit outcome

Compliant

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

### Code reference

Clause 4 Schedule 15.2

### Code related audit information

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

*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

Estimation processes were checked.

### Audit commentary

Actual data has been obtained for all trading periods and no estimates have been required.

### 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 on 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

This clause refers to ICPs. This audit is for NSP volumes only.

### Audit commentary

This clause refers to ICPs. This audit is for NSP volumes only.

### 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 techniques described in clauses 4 to 7 to create historical estimates and forward estimates.*



*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**

Not applicable

#### **Audit commentary**

Not applicable

#### **Audit outcome**

Not applicable

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

#### **Code reference**

*Clauses 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 historical estimates of volume information for each ICP when the relevant seasonal adjustment shape is available, and the reconciliation participant is not using an approved profile in accordance with clause 4A.*

*If the Authority has approved a profile for the purpose of apportioning volume information (in kWh) to part or full consumption periods, a reconciliation participant may use the profile despite the relevant seasonal adjustment shape being available; and if it uses the profile, must otherwise prepare the historical estimate in accordance with the methodology in clause 4.*

*If a seasonal adjustment shape is not available, and the **reconciliation participant** is not using an approved **profile** under clause 4A, 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<sub>Px</sub> 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<sub>Px</sub>.*

#### **Audit observation**

Not applicable

#### **Audit commentary**

Not applicable

#### **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

Not applicable

### Audit commentary

Not applicable

### 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

Not applicable

### Audit commentary

Not applicable

### Audit outcome

Not applicable

## 13. SUBMISSION FORMAT AND TIMING

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

#### Code reference

*Clause 8 Schedule 15.3*

#### Code related audit information

*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

Process to provide NSP volumes submissions were reviewed.

#### Audit commentary

I reviewed the NSP volumes submission for the May 2023 to July 2023 initial submissions, and confirmed the data was correctly aggregated.

#### Audit outcome

Compliant

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

### Code reference

Clause 9 Schedule 15.3

### Code related audit information

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

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

### Audit observation

Process to provide NSP volumes submissions were reviewed.

### Audit commentary

I reviewed the NSP volumes submission for the May 2023 to July 2023 initial submissions, and confirmed the data was rounded to no more than two decimal places.

### Audit outcome

Compliant

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

### Code reference

Clause 10 Schedule 15.3

### Code related audit information

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

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

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

### Audit observation

Not applicable

### Audit commentary

Not applicable

### Audit outcome

Not applicable

## CONCLUSION

AMCI is the MEP for WHA0221VECTNP, and the meter is certified. Accucal performed meter data collection for May 2023 with permission from Vector and AMCI, and AMS has performed meter data collection from June 2023 onwards.

John Candy Consulting completes data validation and reconciliation submissions as Vector's agent.

The agent audit report for AMS will be submitted with this audit. John Candy Consulting and Accucal do not have current agent audit reports. The functions performed by John Candy Consulting were checked as part of this audit and found to be compliant, and the functions performed by Accucal were checked by Steve Woods of Veritek Limited during Accucal's MEP audit and found to be compliant.

I confirmed the following as part of this audit:

- no estimates or corrections have been required during the audit period,
- no defective meters have been identified during the audit period, and
- no clock synchronisation errors outside the allowable tolerances have occurred during the audit period.

Vector had one alleged breach relevant to the scope of this audit. 2307VECT1 was a self-reported alleged breach of Part 15 clause 15.38 and Part 15 Schedule 15.1 clause 2A(1)(b), and fact finding is underway. Data collection occurred for May and June 2023 without Vector being approved as a reconciliation participant. Vector had applied for an exemption from becoming a reconciliation participant which following several communications with the Authority resulted in the decision to become a reconciliation participant, and withdrawal of the exemption application. This caused the delay for Vector's approval process as a reconciliation participant. A desktop audit for application to trade was completed on 30 June 2023, and this reconciliation participant audit has been completed within six months of beginning trading.

Apart from this alleged breach, compliance was confirmed with the code, and I recommend that the next audit is completed in 24 months, which is the maximum period allowed under the code.

## PARTICIPANT RESPONSE

Vector has reviewed this report and did not wish to add any comments.