

**ELECTRICITY INDUSTRY PARTICIPATION CODE  
DISTRIBUTED UNMETERED LOAD AUDIT REPORT**

For

**CENTRAL HAWKE'S BAY DISTRICT COUNCIL  
AND GENESIS ENERGY**

Prepared by: Steve Woods

Date audit commenced: 17 May 2022

Date audit report completed: 26 May 2022

Audit report due date: 1 June 2022

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## EXECUTIVE SUMMARY

This audit of the **Central Hawke's Bay District Council (CHBDC)** DUML database and processes was conducted at the request of **Genesis Energy (Genesis)**, in accordance with clause 15.37B. The purpose of this audit is to verify that the volume information is being calculated accurately, and that profiles have been correctly applied.

The audit was conducted in accordance with the audit guidelines for DUML audits version 1.1.

A RAMM database is held by CHBDC. Fieldwork is completed by Pope Electrical, except for under verandah lighting which is maintained by another contractor. Pope Electrical maintain the RAMM database information and report to Genesis monthly. CHBDC communicates any changes to unmetered under verandah lights to Pope Electrical so that RAMM can be updated.

New connections are rare, but when they occur, CHBDC and Pope Electrical work together to ensure that RAMM is updated promptly once the lights are connected.

Genesis submits the DUML load as NHH using the CST profile. On hours are derived using data from the Astronomical Society.

The audit found the database is considered accurate. One non-compliance was identified, which is that some under veranda lighting has insufficient details to enable the items of load to be found.

The future risk rating of two indicates that the next audit be completed in 24 months. I agree with this recommendation.

## AUDIT SUMMARY

### NON-COMPLIANCES

Subject	Section	Clause	Non Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Location of each item of load	2.3	11(2)(b) of Schedule 15.3	Insufficient information to locate some under veranda lighting.	Moderate	Low	2	Identified
Future Risk Rating						2	

<b>Future risk rating</b>	0	1-4	5-8	9-15	16-18	19+
<b>Indicative audit frequency</b>	36 months	24 months	18 months	12 months	6 months	3 months

### RECOMMENDATIONS

Subject	Section	Description	Recommendation

### ISSUES

Subject	Section	Description	Issue
		Nil	

## 1. ADMINISTRATIVE

### 1.1. Exemptions from Obligations to Comply with Code

#### Code reference

*Section 11 of Electricity Industry Act 2010.*

#### Code related audit information

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

#### Audit observation

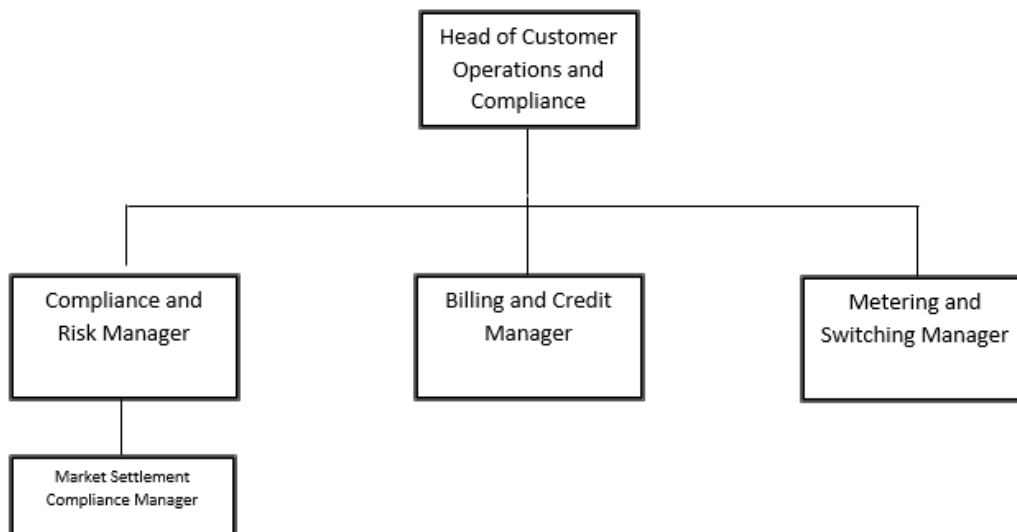
The Electricity Authority's website was reviewed to identify any exemptions relevant to the scope of this audit.

#### Audit commentary

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

### 1.2. Structure of Organisation

Genesis provided a copy of their organisational structure:



### 1.3. Persons involved in this audit

Auditor:

**Steve Woods**

**Veritek Limited**

**Electricity Authority Approved Auditor**

Other personnel assisting in this audit were:

Name	Title	Company
Ronan Galvin	Streetlight Manager	Pope Electrical
Julia Jones	DUML Data & Stakeholder Lead - Market Settlement Compliance	Genesis

#### 1.4. Hardware and Software

The SQL database used for the management of DUML is remotely hosted by Thinkproject NZ Ltd. The database is commonly known as “RAMM” which stands for “Roading Asset and Maintenance Management”.

Database back-up is in accordance with standard industry procedures. Access to the database is secure by way of password protection.

#### 1.5. Breaches or Breach Allegations

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

#### 1.6. ICP Data

ICP Number	Description	NSP	Profile	Number of items of load	Database wattage (watts)
7012016000CH5A1	STREETLIGHTING CENTRAL HAWKES BAY DC WAIPUKURAU	HWA0331	CST	815	78,069
7012036000CHC6C	UNDER VERANDAH COMMUNITY LIGHTING RUATANIWHA STREET WAIPUKURAU	HWA0332	CST	126	7,722
<b>Total</b>				<b>942</b>	<b>85,791</b>

#### 1.7. Authorisation Received

All information was provided directly by Genesis, CHBDC, and Pope Electrical.

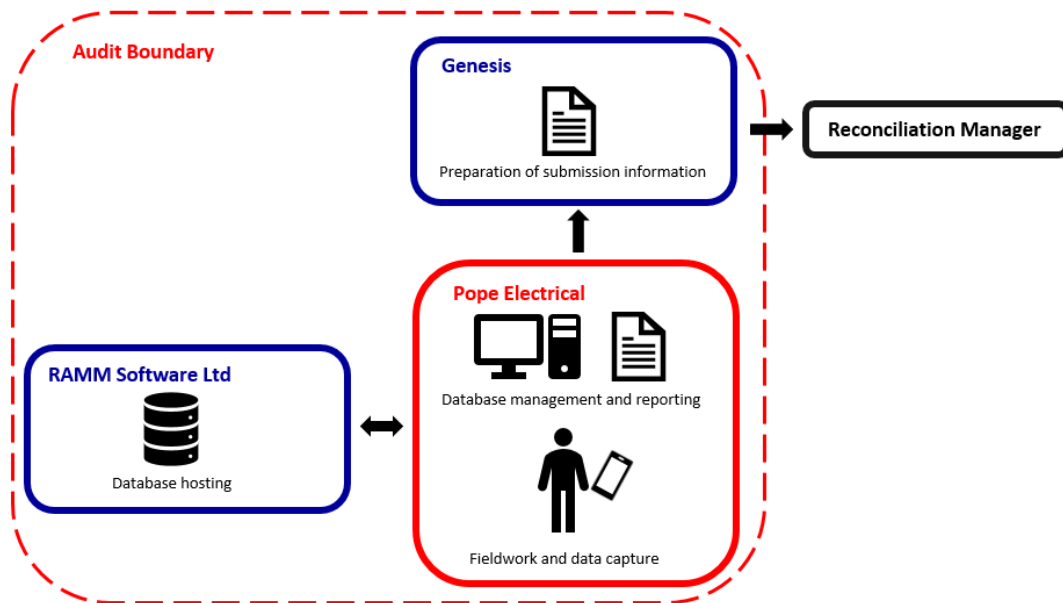
#### 1.8. Scope of Audit

This audit of the CHBDC DUML database and processes was conducted at the request of Genesis, in accordance with clause 15.37B. The purpose of this audit is to verify that the volume information is being calculated accurately, and that profiles have been correctly applied. The audit was conducted in accordance with the audit guidelines for DUML audits version 1.1.

A RAMM database is held by CHBDC. Fieldwork is completed by Pope Electrical, except for under verandah lighting which is maintained by another contractor. Pope Electrical maintain the RAMM database information and report to Genesis monthly. CHBDC communicates any changes to unmetered under verandah lights to Pope Electrical so that RAMM can be updated.

Genesis submits the DUML load as NHH using the CST profile, based on the monthly reports from RAMM. On hours are based on data from the Astronomical Society.

The scope of the audit encompasses the collection, security and accuracy of the data, including the preparation of submission information based on the database reporting. The diagram below shows the audit boundary for clarity.



The field audit was undertaken of a statistical sample of 182 items of load on 23 May 2022.

### 1.9. Summary of previous audit

The previous audit was conducted by Tara Gannon of Veritek Ltd in April 2019. Compliance was recorded and the one recommendation is no longer relevant because NZTA lighting has been removed from this database.

Subject	Section	Clause	Non-compliance	Status

Subject	Section	Clause	Recommendation	Status
Tracking of load changes	2.6	11(3) of Schedule 15.3	Compare the lights recorded against CHBDC and NZTA Waipukurau in RAMM to ensure that all load is accounted for and recorded against the correct entity and ICP.	Cleared

### 1.10. Distributed unmetered load audits (Clause 16A.26 and 17.295F)

#### Code reference

*Clause 16A.26 and 17.295F*

#### Code related audit information

*Retailers must ensure that DUML database audits are completed:*

1. *by 1 June 2018 (for DUML that existed prior to 1 June 2017)*

2. *within three months of submission to the reconciliation manager (for new DUML)*
3. *within the timeframe specified by the Authority for DUML that has been audited since 1 June 2017.*

**Audit observation**

Genesis have requested Veritek to undertake this streetlight audit.

**Audit commentary**

This audit report confirms that the requirement to conduct an audit has been met for this database within the required timeframe.

**Audit outcome**

Compliant



## 2. DUML DATABASE REQUIREMENTS

### 2.1. Deriving submission information (Clause 11(1) of Schedule 15.3)

#### Code reference

*Clause 11(1) of Schedule 15.3*

#### Code related audit information

*The retailer must ensure the:*

- *DUML database is up to date*
- *methodology for deriving submission information complies with Schedule 15.5.*

#### Audit observation

The process for calculation of consumption was examined.

#### Audit commentary

This clause requires that the distributed unmetered load database must satisfy the requirements of schedule 15.5 regarding the methodology for deriving submission information. Genesis reconciles this DUML load as NHH using the CST profile, and on and off times are derived from Astronomical Society data.

I checked the April 2022 submission data for both ICPs against the RAMM information and on hours, and confirmed the calculation was correct.

As discussed in **section 3.1**, the database information was found to be accurate.

#### Audit outcome

Compliant

### 2.2. ICP identifier and items of load (Clause 11(2)(a) and (aa) of Schedule 15.3)

#### Code reference

*Clause 11(2)(a) and (aa) of Schedule 15.3*

#### Code related audit information

*The DUML database must contain:*

- *each ICP identifier for which the retailer is responsible for the DUML*
- *the items of load associated with the ICP identifier.*

#### Audit observation

The database was checked to confirm whether an ICP is recorded for each item of load.

#### Audit commentary

The analysis found that all items of load had an ICP number recorded.

#### Audit outcome

Compliant

## 2.3. Location of each item of load (Clause 11(2)(b) of Schedule 15.3)

### Code reference

Clause 11(2)(b) of Schedule 15.3

### Code related audit information

The DUML database must contain the location of each DUML item.

### Audit observation

The database was checked to confirm the location is recorded for all items of load.

### Audit commentary

All items of load have street names recorded, and all streetlights have GPS coordinates recorded. The items of load without GPS coordinates are under veranda lighting, and these do not have sufficient information to enable them all to be located. There is a "House Address" field, which records the name of the business the light is in front of, but the business names can change or the address can become vacant. I could not locate two items of load on Racecourse Road because they were recorded as being outside a vacant address without any other information. I recommend GPS coordinates, or street numbers are used rather than shop or business names.

### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 2.3 With: Clause 11(2)(b) of Schedule 15.3 From: 01-May-19 To: 23-May-22	Insufficient information to locate some under veranda lighting. 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 recorded as moderate because they mitigate risk most of the time but there is room for improvement. The impact on settlement and participants is minor; therefore the audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
Genesis has advised the council of the audit outcome regarding the insufficient information locating under veranda lighting; with the intent that council makes every effort to ensure the exceptions are rectified.		Continuous Improvement	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	

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#### 2.4. Description and capacity of load (Clause 11(2)(c) and (d) of Schedule 15.3)

##### Code reference

*Clause 11(2)(c) and (d) of Schedule 15.3*

##### Code related audit information

*The DUML database must contain:*

- *a description of load type for each item of load and any assumptions regarding the capacity*
- *the capacity of each item in watts.*

##### Audit observation

The database was checked to confirm that it contained a field for lamp type and wattage capacity and included any ballast or gear wattage.

##### Audit commentary

A description of the model, lamp wattage, and gear wattage are recorded for all items of load. The accuracy of the populated lamp and gear wattages is discussed in **section 3.1**.

##### Audit outcome

Compliant

#### 2.5. All load recorded in database (Clause 11(2A) of Schedule 15.3)

##### Code reference

*Clause 11(2A) of Schedule 15.3*

##### Code related audit information

*The retailer must ensure that each item of DUML for which it is responsible is recorded in this database.*

##### Audit observation

A field audit of a sample of 182 items of load was undertaken.

##### Audit commentary

The field audit found one incorrect wattage and one under veranda light was missing. There were no additional items of load identified. The discrepancies are discussed in **Section 3.1**.

##### Audit outcome

Compliant

#### 2.6. Tracking of load changes (Clause 11(3) of Schedule 15.3)

##### Code reference

*Clause 11(3) of Schedule 15.3*

##### Code related audit information

*The DUML database must track additions and removals in a manner that allows the total load (in kW) to be retrospectively derived for any given day.*

### **Audit observation**

The ability of the database to track changes was assessed and the process for tracking of changes in the database was examined.

### **Audit commentary**

The RAMM database functionality achieves compliance with the code.

### **Audit outcome**

Compliant

## 2.7. Audit trail (Clause 11(4) of Schedule 15.3)

### **Code reference**

*Clause 11(4) of Schedule 15.3*

### **Code related audit information**

*The DUMML database must incorporate an audit trail of all additions and changes that identify:*

- *the before and after values for changes*
- *the date and time of the change or addition*
- *the person who made the addition or change to the database*

### **Audit observation**

The database was checked for audit trails.

### **Audit commentary**

The database has a complete audit trail.

### **Audit outcome**

Compliant

### 3. ACCURACY OF DUML DATABASE

#### 3.1. Database accuracy (Clause 15.2 and 15.37B(b))

##### Code reference

Clause 15.2 and 15.37B(b)

##### Code related audit information

Audit must verify that the information recorded in the retailer's DUML database is complete and accurate.

##### Audit observation

The DUML Statistical Sampling Guideline was used to determine the database accuracy. The table below shows the survey plan.

Plan Item	Comments
Area of interest	Central Hawke's Bay District Council region, excluding NZTA but including under veranda lighting.
Strata	<p>The database contains 942 items of load located in the Central Hawke's Bay.</p> <p>Under veranda lighting has a different process to streetlights, therefore I placed under veranda lighting in a separate stratum and split the streetlights by street name. I created the following strata.</p> <ul style="list-style-type: none"><li>• Street name A to E</li><li>• Street name F to L</li><li>• Street name M to P</li><li>• Street name R to Z</li><li>• Under veranda lighting</li></ul>
Area units	I created a pivot table of the roads in each strata, and used a random number generator in a spreadsheet to select a total of 45 sub-units.
Total items of load	182 items of load were checked, making up approximately 20% of the entire database wattage.

Wattages for all items of load were checked against the published standardised wattage tables produced by the Electricity Authority, and the manufacturer's specifications.

##### Audit commentary

##### Database accuracy based on the field audit

The field audit found two discrepancies, as follows:

- One under veranda light, labelled as "Brookers 10 rear" appears to have been removed. The pole ID is 998.
- Pole ID 548 on Tavistock Place is recorded as a 160 watt self ballasting fitting but is a standard eco bulb, estimated at 60 watts.

The results from the database auditing tool indicate 100% accuracy, because the tool is designed to record MWh which is not granular to identify a discrepancy of part of a kWh.

### **Wattage accuracy**

The database was checked against the published standardised wattage table, and manufacturer's specifications where available. Where differences to expected values were present, they were verified against Pope Electrical's wattage information.

All lamp and gear wattages were confirmed to be correct.

### **Audit outcome**

Compliant

## **3.2. Volume information accuracy (Clause 15.2 and 15.37B(c))**

### **Code reference**

*Clause 15.2 and 15.37B(c)*

### **Code related audit information**

*The audit must verify that:*

- *volume information for the DUML is being calculated accurately*
- *profiles for DUML have been correctly applied.*

### **Audit observation**

The submission was checked for accuracy for the month the database extract was supplied. This included:

- checking the registry to confirm that all ICPs have the correct profile and submission flag; and
- checking the database extract combined with the burn hours against the submitted figure to confirm accuracy.

### **Audit commentary**

This clause requires that the distributed unmetered load database must satisfy the requirements of schedule 15.5 regarding the methodology for deriving submission information. Genesis reconciles this DUML load as NHH using the CST profile, and on and off times are derived from Astronomical Society data.

I checked the April 2022 submission data for both ICPs against the RAMM information and on hours, and confirmed the calculation was correct.

As discussed in **section 3.1**, the database information was found to be accurate.

### **Audit outcome**

Compliant

## CONCLUSION

A RAMM database is held by CHBDC. Fieldwork is completed by Pope Electrical, except for under verandah lighting which is maintained by another contractor. Pope Electrical maintain the RAMM database information and report to Genesis monthly. CHBDC communicates any changes to unmetered under verandah lights to Pope Electrical so that RAMM can be updated.

New connections are rare, but when they occur, CHBDC and Pope Electrical work together to ensure that RAMM is updated promptly once the lights are connected.

Genesis submits the DUML load as NHH using the CST profile. On hours are derived using data from the Astronomical Society.

The audit found the database is considered accurate. One non-compliance was identified, which is that some under veranda lighting has insufficient details to enable the items of load to be found.

The future risk rating of two indicates that the next audit be completed in 24 months. I agree with this recommendation.

## PARTICIPANT RESPONSE

Genesis has no objections.