

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

For

**KAPITI RETIREMENT TRUST AND CONTACT
ENERGY**

Prepared by: Tara Gannon

Date audit commenced: 13 March 2018

Date audit report completed: 29 March 2018

Audit report due date: 1 June 2018

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EXECUTIVE SUMMARY

This audit of the Kapiti Retirement Trust DUMML database and processes was conducted at the request of Contact Energy Limited (Contact), 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 DUMML audits version 1.1, which became effective on 1 June 2017.

Kapiti Retirement Trust maintains an Excel spreadsheet of streetlights. Streetlight installation and maintenance is completed by Stones Electrical Limited as a contractor to Kapiti Retirement Trust.

If any of the light information changes, the spreadsheet is updated, and a copy is provided to Contact. New installations and changes are rare, the last change occurred several years ago. There are no plans to upgrade the existing lights to LEDs.

The audit process included a field audit of all 36 items of load and found 99.7% accuracy:

- One item of load had incorrect details recorded, and
- Three items of load with more than one light had incorrect total wattages recorded, due to an error in the ballast wattage calculation where multiple lights are present.

The differences would result in estimated over reporting of approximately 11 W or 47 kWh per annum.

The future risk rating of nine indicates that the next audit be completed in 12 months. Taking into consideration the low impact of the non-compliances, I recommend the next audit should be completed in 18 months. The matters raised are detailed below:

AUDIT SUMMARY

NON-COMPLIANCES

Subject	Section	Clause	Non Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Deriving submission information	2.1	11(1) of Schedule 15.3	The database used to prepare submissions contains some inaccurate information.	Moderate	Low	2	Identified
Description and capacity of load	2.4	Clause 11(2)(c) and (d) of Schedule 15.3	Three poles with more than one lamp installed had an incorrect total wattage recorded.	Moderate	Low	2	Identified
Audit trail	2.7	Clause 11(4) of Schedule 15.3	The database does not contain an audit trail.	Strong	Low	1	Disputed
Database accuracy	3.1	Clause 15.2 and 15.37B(b)	The database used to prepare submissions contains some inaccurate information.	Moderate	Low	2	Identified
Volume information accuracy	3.2	Clause 15.2 and 15.37B(c)	The database used to prepare submissions contains some inaccurate information.	Moderate	Low	2	Identified
Future Risk Rating						9	

Future risk rating	1-3	4-6	7-8	9-17	18-26	27+
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

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 is one exemption in place relevant to the scope of this audit:

Exemption No. 177: Exemption to clause 8(g) of schedule 15.3 of the Electricity Industry Participation Code 2010 ("Code") in respect of providing half-hour ("HHR") submission information instead of non half-hour ("NHH") submission information for distributed unmetered load ("DUML"). This exemption expires at the close of 31 October 2023.

The exemption does not apply for Kapiti Retirement Trust, because the submission type is NHH.

1.2. Structure of Organisation

Not applicable

1.3. Persons involved in this audit

Auditor:

Tara Gannon

Veritek Limited

Electricity Authority Approved Auditor

Other personnel assisting in this audit were:

Name	Title	Company
David Blair	Support Services Group Manager	Kapiti Retirement Trust
Bernie Cross	Energy Reconciliation Manager	Contact Energy

1.4. Hardware and Software

The streetlight data is maintained in an Excel spreadsheet. The spreadsheet is saved on Kapiti Retirement Trust’s network and backed up along with other files on the network according to standard industry procedures. Access to the network is secure.

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	Number of items of load	Database wattage (watts)
0015768900ELB35	STREET LIGHTING – MARILYN CLOSE	PRM0331	36	3,236

1.7. Authorisation Received

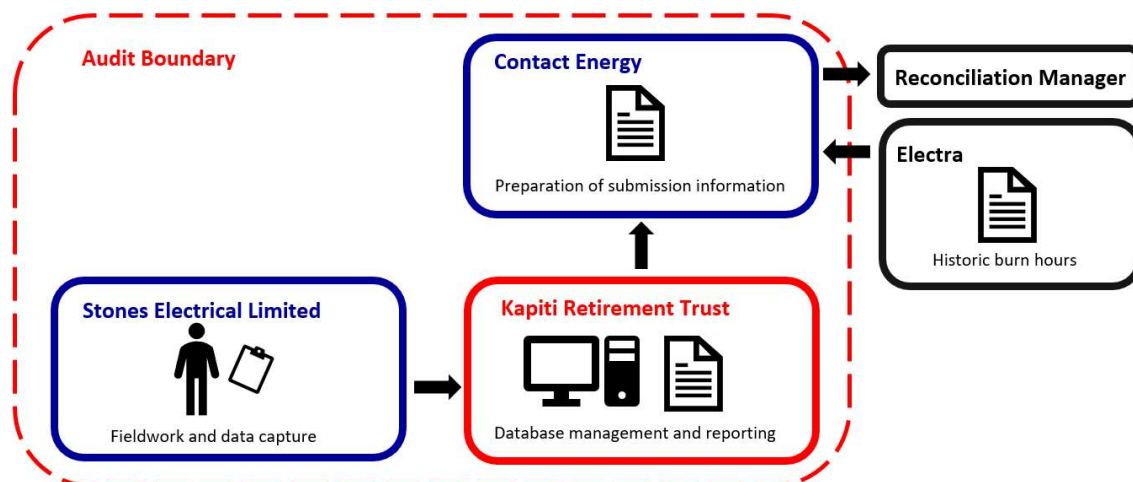
All information was provided directly by Kapiti Retirement Trust and Contact.

1.8. Scope of Audit

Kapiti Retirement Trust maintains an Excel spreadsheet of streetlights. Streetlight installation and maintenance is completed by Stones Electrical Limited as a contractor to Kapiti Retirement Trust.

If any of the light information changes, the spreadsheet is updated, and a copy is provided to Contact. New installations and changes are rare, the last change occurred several years ago. There are no plans to upgrade the existing lights to LEDs.

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

The field audit was undertaken of all 36 items of load on 13 March 2018.

1.9. Summary of previous audit

This is the first audit of the Kapiti Retirement Trust database completed by Veritek.

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 3 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

Contact 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. Compliance is confirmed.

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

Contact reconciles this load as NHH using the RPS profile. The calculation is based on historical average burn hours provided by Electra, and the database provided by Kapiti Retirement Trust.

I checked the submission for February 2018 and confirmed the calculation method was correct.

While Contact are using up to date database information, there is some inaccurate data within the database. This is recorded as non-compliance and discussed in **sections 2.4** and **3.1**.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 2.1 With: Clause 11(1) of Schedule 15.3 From: unknown To: 13-Mar-18	The database used to prepare submissions contains some inaccurate information. Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	Controls are rated as moderate, because they are sufficient to ensure that data for most lamps is recorded correctly. The impact is low, as the differences would result in estimated over reporting of approximately 11 W or 47 kWh per annum.		
Actions taken to resolve the issue		Completion date	Remedial action status
Database has been updated and Contact's submission volumes will be reflecting the correct settlement volumes		25 May 2018	Identified

Preventative actions taken to ensure no further issues will occur	Completion date	
As above	As above	

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 an ICP is recorded for each item of load.

Audit commentary

All items of load relate to one ICP, and the ICP number is recorded in the database name.

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 had clear street address information recorded.

Audit outcome

Compliant

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 load type, bulb wattage, ballast wattage, and total wattage are recorded for each item of load.

For items of load with more than one bulb, the total wattage calculation was incorrect. The lamp wattage was multiplied by the number of bulbs, but the ballast wattage was not. This is recorded as non-compliance below.

Four items of load were affected, but I found one was incorrectly recorded with two 30W fluorescent lights when one 70W sodium light was present. This lamp type discrepancy is recorded as non-compliance in **section 3.1**.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 2.4 With: Clause 11(2)(c) and (d) of Schedule 15.3 From: unknown To: 13-Mar-18	Three poles with more than one lamp installed had an incorrect total wattage recorded. Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	Controls are rated as moderate, because they are sufficient to ensure that data for most lamps is recorded correctly. The impact is low, as the differences would result in estimated under reporting of approximately 43 W or 182 kWh per annum.		
Actions taken to resolve the issue		Completion date	Remedial action status
Database has been updated and Contact's submission volumes will be reflecting the correct settlement volumes		25 May 2018	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
As above		As above	

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 all items of load was undertaken.

Audit commentary

The field audit findings are detailed in the table below. No count differences were identified.

Address	Database Count	Field Count	Count differences	Wattage differences	Comments
Florence Way	1	1	-	-	
Grantham Court	9	9	-	-	
Lloyd Place	5	5	-	-	
Lodge Drive	5	5	-	-	
Marilyn Close	4	4	-	-	
Rotary Place	5	5	-	-	
Sevenoaks Court	5	5	-	1	One 70 W Sodium light was recorded as two 30 W fluorescent lights. This is recorded as non-compliance in section 3.1 .
South Apt Roadway	2	2	-	-	
Total	36	36	-	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 process for tracking of changes in the database was examined.

Audit commentary

Any changes that are made during any given month take effect from the beginning of that month. The information is available which would allow for the total load in kW to be retrospectively derived for any day. On 20 September 2012, the Authority sent a memo to retailers and auditors advising that tracking of load changes at a daily level was not required if the database contained an audit trail. I have interpreted this to mean that the provision of a copy of the report to Contact when changes occur is sufficient to achieve compliance.

The processes were reviewed for new lamp connections and the tracking of load changes due to faults and maintenance. Fault and maintenance work is completed by Stones Electrical Limited, who provide information on the work completed to Kapiti Retirement Trust. If any changes are made, the database is updated, and a copy provided to Contact. New installations and changes are rare, the last change occurred several years ago. There are no plans to upgrade the existing lights to LEDs.

Formal outage patrols do not occur; outages are normally promptly reported by residents.

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 excel spreadsheet does not contain an audit trail. This is recorded as non-compliance below.

When changes occur an updated copy of the database is provided to Contact by email. The email records the date of the change, and the before and after values can be determined by comparing to the previous version. The database is maintained by the Support Services Group Manager at Kapiti Retirement Trust.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 2.7 With: Clause 11(4) of Schedule 15.3 From: unknown To: 13-Mar-18	The database does not contain an audit trail. Potential impact: Low Actual impact: Low Audit history: None Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
Low	Controls are rated as strong and the impact as low, because all the information required to meet the audit trail requirements is available, although it is not formally recorded within the database.		
Actions taken to resolve the issue		Completion date	Remedial action status
Contact and Kapiti Retirement Trust have an agreed process whereby any changes or updates to the streetlight details results in a new version of the spreadsheet thereby we believe there is a sufficient audit trail for DUML of this size which is also static in nature.		Resolved	Disputed
Preventative actions taken to ensure no further issues will occur		Completion date	
As above		As above	

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 audit findings were used to determine if the information contained in the database is complete and accurate.

Wattages were checked for alignment with the published standardised wattage table produced by the Electricity Authority.

Audit commentary

The database was found to contain a small number of inaccuracies:

- One 70 W Sodium light was recorded as two 30 W fluorescent lights. This resulted in over reporting of approximately 54 W or 229 kWh per annum.
- For items of load with more than one bulb, the total wattage calculation was incorrect. The lamp wattage was multiplied by the number of bulbs, but the ballast wattage was not. This resulted in under reporting of approximately 43 W or 182 kWh per annum.

Wattages were checked against the published standardised wattage table produced by the Electricity Authority and found to be correct except the items of load with more than one bulb described above.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.1 With: Clause 15.2 and 15.37B(b) From: unknown To: 13-Mar-18	The database used to prepare submissions contains some inaccurate information. Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2
Audit risk rating	Rationale for audit risk rating
Low	Controls are rated as moderate, because they are sufficient to ensure that data for most lamps is recorded correctly. The impact is low, as the differences would result in estimated over reporting of approximately 11 W or 47 kWh per annum.

Actions taken to resolve the issue	Completion date	Remedial action status
Database has been updated and Contact's submission volumes will be reflecting the correct settlement volumes	25 May 2018	Identified
Preventative actions taken to ensure no further issues will occur	Completion date	
As above	As above	

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
- checking the database extract combined with the burn hours against the submitted figure to confirm accuracy.

Audit commentary

Contact reconciles this load as NHH using the RPS profile. The calculation is based on historical average burn hours provided by Electra, and the database provided by Kapiti Retirement Trust.

I checked the submission for February 2018 and confirmed the calculation method was correct.

While Contact are using up to date database information, there is some inaccurate data within the database. This is recorded as non-compliance and discussed in **sections 2.4** and **3.1**.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.2 With: Clause 15.2 and 15.37B(c) From: unknown To: 13-Mar-18	The database used to prepare submissions contains some inaccurate information. Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2

Audit risk rating	Rationale for audit risk rating		
Low	<p>Controls are rated as moderate, because they are sufficient to ensure that data for most lamps is recorded correctly.</p> <p>The impact is low, as the differences would result in estimated over reporting of approximately 11 W or 47 kWh per annum.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
Database has been updated and Contact's submission volumes will be reflecting the correct settlement volumes		25 May 2018	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
As above		As above	

CONCLUSION

Kapiti Retirement Trust maintains an Excel spreadsheet of streetlights. Streetlight installation and maintenance is completed by Stones Electrical Limited as a contractor to Kapiti Retirement Trust.

If any of the light information changes, the spreadsheet is updated, and a copy is provided to Contact. New installations and changes are rare, the last change occurred several years ago. There are no plans to upgrade the existing lights to LEDs.

The audit process included a field audit of all 36 items of load and found 99.7% accuracy:

- One item of load had incorrect details recorded, and
- Three items of load with more than one light had incorrect total wattages recorded, due to an error in the ballast wattage calculation where multiple lights are present.

The differences would result in estimated over reporting of approximately 11 W or 47 kWh per annum.

The future risk rating of nine indicates that the next audit be completed in 12 months. Taking into consideration the low impact of the non-compliances, I recommend the next audit should be completed in 18 months.

PARTICIPANT RESPONSE

Contact is concerned about the consequences of the new audit regime relating to DUML audits for small loads such as Kapiti Retirement Trust.

In this case the DUML load is only 13,000 kWh per annum which places it within the same level as a large residential meter installation category 1 site.

In this instance this audit has identified the database is 99.7% accurate and recommending a re audit period of 18 months. However a metering installation category 1 site can have an inaccuracy of +/- 2% and an inspection / recertification cycle 7.5 / 15 years.

Additionally the DUML audit costs are far in excess of cat 1 meter inspection and certification costs.

Contact would encourage the Authority to reconsider the inclusion of DUML of this small size within the audit regime where the compliance costs far outweigh any possible benefit to the market or where the actual market impact of small database errors is insignificant.