

ELECTRICITY INDUSTRY PARTICIPATION CODE
DISTRIBUTED UNMETERED LOAD AUDIT REPORT

VERITEK

For

KAWERAU DISTRICT COUNCIL
AND GENESIS ENERGY LIMITED
NZBN:9429037706609

Prepared by: Steve Woods

Date audit commenced: 22 November 2022

Date audit report completed: 26 May 2023

Audit report due date: 15-Feb-23

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EXECUTIVE SUMMARY

This audit of the **Kawerau District Council (KDC)** DUML database and processes was conducted at the request of **Genesis Energy Limited (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.

preparation of submission information. The field work and management of the RAMM database is carried out by Horizon.

The management of the RAMM database and associated field processes has changed during the audit period and the database accuracy has improved as a result. Whilst the field audit determined the database was accurate to within +/- 5%, there are still some discrepancies to resolve to achieve full accuracy.

This audit found five non-compliances and makes two recommendations. The future risk rating of 15 indicates that the next audit be completed in 12 months. I agree with this recommendation.

The matters raised are detailed in the table below.

AUDIT SUMMARY

NON-COMPLIANCES

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Distributed unmetered load audits	1.10	16A.26	Audit report not completed by due date.	Strong	Low	1	Cleared
Deriving submission information	2.1	11(1) of Schedule 15.3	On off times are based on a logger located in Taupo and not in Kawerau. Some ballast wattage discrepancies leading to over submission of 11,131 kWh per annum. Submission is based on a snapshot and does not consider historic adjustments	Moderate	Medium	4	
All load recorded in database	2.5	11(2A) of Schedule 15.3	Five additional lights in the field	Moderate	Low	2	
Database accuracy	3.1	15.2 and 15.37B(b)	Festive lighting is connected but the volume is not recorded. Some ballast wattage discrepancies leading to over submission of 11,131 kWh per annum.	Moderate	Medium	4	
Volume information accuracy	3.2	15.2 and 15.37B(c)	On off times are based on a logger located in Taupo and not in Kawerau. Some ballast wattage discrepancies leading to over submission of 11,131 kWh per annum. Submission is based on a snapshot and does not consider historic adjustments	Moderate	Medium	4	
Future Risk Rating						15	

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

RECOMMENDATIONS

Subject	Section	Description
Database accuracy	3.1	Record festive lights in RAMM.
		Check lights on Anaru Drive and Tiwhatiwha Cres to confirm if they are livened and if so, update the database.

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

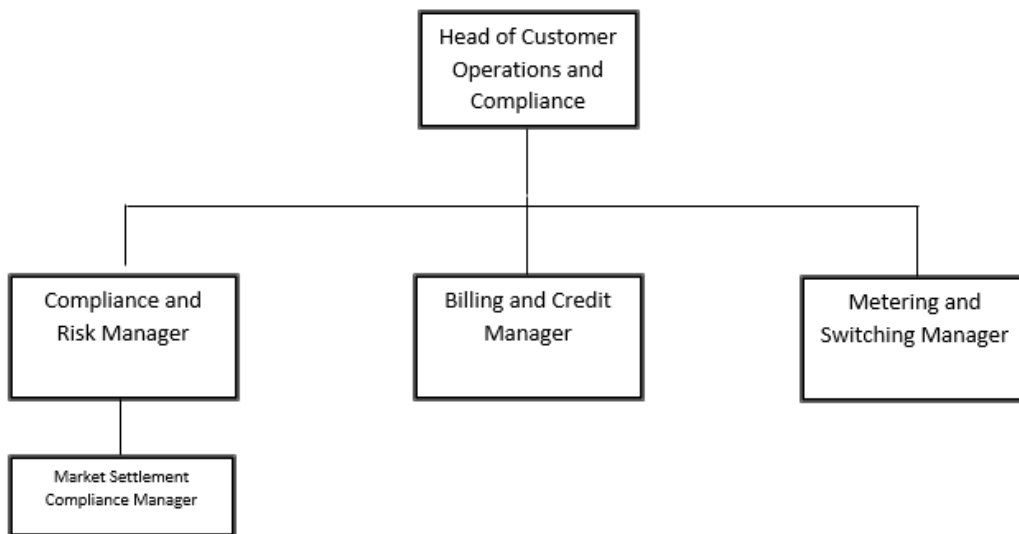
The Electricity Authority's website was reviewed to identify any exemptions relevant to the scope of this audit.

Audit commentary

There are no exemptions in place relevant to the scope of this 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
Nirav Teli	DUML Data & Stakeholder Lead - Market Settlement Compliance	Genesis Energy
Rhys Baker	Parks & Recreation Manager	Kawerau DC
Stacey Flintoff	Streetlight Coordinator	Horizon Networks

1.4. Hardware and Software

The SQL database used for the management of DUML is remotely hosted by thinkproject New Zealand Limited. The database is commonly known as “RAMM” which stands for “Road Assessment and Maintenance Management”. The specific data used for DUML is held in the Streetlight tables. thinkproject New Zealand Limited backs up the database and assists with disaster recovery as part of their hosting service.

Access to the database is secure by way of password protection.

Systems used by the trader and their agent to calculate submissions are assessed as part of their reconciliation participant audits.

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	Profile	Number of items of load	Database wattage (watts)
1000023043BP177	Streetlights, KAWERAU	NST	923	46,192

1.7. Authorisation Received

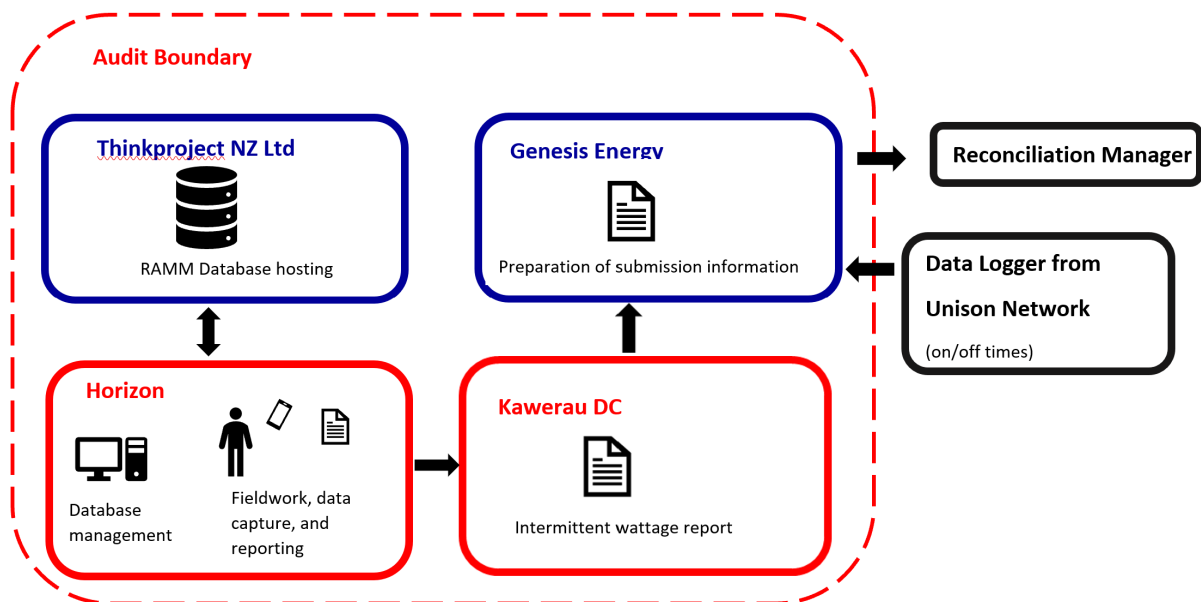
All information was provided directly by Genesis, KDC or Horizon Network.

1.8. Scope of Audit

This audit of the **Kawerau District Council (KDC)** DUMML database and processes was conducted at the request of **Genesis Energy Limited (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 DUMML audits version 1.1.

Genesis reconciles this DUMML load using the NST profile. A monthly database extract is being used to calculate the kW figure. A RAMM database is managed by KDC in relation to this load. I compared the field findings to the database records.

The database is remotely hosted by thinkproject Ltd. The field work is carried out by Horizon. The asset data capture and database population are conducted by Horizon. The scope of the audit encompasses the collection, security and accuracy of the data, including the preparation of submission information. The diagram below shows the audit boundary for clarity.



The field audit was undertaken of a statistical sample of 261 items of load on 26th April 2023.

1.9. Summary of previous audit

The previous audit was conducted by Rebecca Elliot in August 2022. The findings are shown in the table below.

Table of Non-compliances

Subject	Section	Clause	Non-Compliance	Status
Distributed unmetered load audits	1.10	16A.26	Audit report not completed by due date.	Still existing
Participants to give access	1.11	16A.4	Information was not provided within 15 business days of the request.	Cleared
Deriving submission information	2.1	11(1) of Schedule 15.3	<p>Actual on and off times not used to calculate consumption.</p> <p>Total annual consumption is estimated to be 14,800 kWh lower than the DUML database indicates, based on the field audit.</p> <p>The RAMM database is not being updated with changes made in the field.</p> <p>None of the discrepancies from the last two audits have been updated in the database including adding the lights on Anaru Drive into the database.</p> <p>Submission is based on a snapshot and does not consider historic adjustments.</p>	<p>Cleared for most items raised in the last audit.</p> <p>Some additional items in this section in this audit.</p>
ICP identifier and items of load	2.2	Clause 11(2)(a) and (aa) of Schedule 15.3	Blank ICP field for two items of load.	Cleared
Description and capacity of each item of load	2.4	11(2)(c)&(d) of Schedule 15.3	Lamp and gear wattage fields not provided for the audit.	Cleared
Database accuracy	3.1	15.2 and 15.37B(b)	<p>Database accuracy is outside the allowable +/- 5% threshold resulting in an estimated over submission of 14,800 kWh per annum.</p> <p>Lamp and gear wattages not provided for the audit.</p> <p>Two items of load without ICPs.</p> <p>Festive lighting is connected but the volume is not recorded.</p> <p>The RAMM database is not being updated with changes made in the field.</p> <p>None of the discrepancies from the last two audits have been updated in the database including adding the lights on Anaru Drive into the database.</p>	<p>Cleared for most items raised in the last audit.</p> <p>Some additional items in this section in this audit.</p>

Subject	Section	Clause	Non-Compliance	Status
Volume information accuracy	3.2	15.2 and 15.37B(c)	<p>Actual on and off times not used to calculate consumption.</p> <p>Total annual consumption is estimated to be 14,800 kWh lower than the DUML database indicates, based on the field audit.</p> <p>The RAMM database is not being updated with changes made in the field.</p> <p>None of the discrepancies from the last two audits have been updated in the database including adding the lights on Anaru Drive into the database.</p> <p>Submission is based on a snapshot and does not consider historic adjustments.</p>	<p>Cleared for most items raised in the last audit.</p> <p>Some additional items in this section in this audit.</p>

Table of Recommendations

Subject	Section	Description	Status
Description and capacity of load	2.4	Confirm that the lamp wattage and ballast fields are populated.	Cleared
Database accuracy	3.1	Record festive lights in RAMM.	Still existing
		Liaise with KDC and Horizon to ensure new streetlights are accepted by the trader prior to them being electrically connected.	Cleared
		Undertake full field audit.	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 has not been completed on time due to the delay in getting a database extract because Kawerau DC was completing a full field audit.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 1.10 With: Clause 16A.26 From: 15-Feb-23 To: 23-May-23	Audit report not completed by due date. Potential impact: Low Actual impact: Low Audit history: Once Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
Low	The controls are rated as strong because Genesis puts significant effort into ensuring audits are completed on time. The impact is assessed to be low because the delay was largely to accommodate a full field audit of the load in the database.		
Actions taken to resolve the issue		Completion date	Remedial action status
Genesis discussed with KDC and after mutually agreeing with KDC opted to delay the audit. Genesis has also received an extension from the EA until end of May-2023 to complete this audit. The reason to delay was to ensure full field audit is completed and RAMM updated with latest findings (This can be seen in the dataset provided for auditing). Genesis has been continuously working with KDC and their contractors to improve on all compliance aspects.		26/05/2023	Cleared
Preventative actions taken to ensure no further issues will occur		Completion date	
Genesis will continue to work with the council to help them increase database accuracy.		26/05/2023	

1.11. Participants to give access (Clause 16A.4)

Code reference

Clause 16A.4

Code related audit information

(1) A participant must give the Authority or an auditor full access to all information that may be required for the purposes of carrying out an audit.

(2) The participant must provide the information—

(a) at no charge; and

(b) no later than 15 business days after receiving a request for the information from the Authority or an auditor, as the case may be.

Audit observation

The code requires that information requested by the auditor be provided within 15 business days of the request. Veritek provided information requests to Genesis and KDC for the purposes of this audit.

Audit commentary

The previous audit recorded non-compliance in relation to this clause, however for this audit, Genesis advised at the earliest opportunity that the database extract would be delayed until a full field audit was conducted, therefore an information request was not sent. Compliance is confirmed.

Audit outcome

Compliant

2. DUMML 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:

- *DUMML 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 and the application of profiles was checked. The database was checked for accuracy.

Audit commentary

Genesis reconciles this DUMML load using the NST profile. The database extract provided each month is being used to calculate the kW figure. Genesis has a compliant process for calculating monthly kWh, however a processing error for April 2023 resulted in under submission by approximately 1,000 kWh. This has been corrected and the revision process will ensure submission is correct.

A logger in Taupo on the Unison network is being used to calculate the burn hours and these burn hours are being used. This is likely to be more accurate than the previous 11.9 hours daily burn hour figure that was being used but is not accurate as it is on a different network. KDC intends to move away from the ripple relay to daylight sensors in each light. I recommend that Genesis work with KDC to ensure that the correct burn hours are applied, and a suitable profile is in place for submission. No time frame was given as to when this will be deployed.

The field audit found the database was accurate to within +/- 5%.

A 100% field audit has been conducted, but there were still some database discrepancies, as follows:

- 154 17 watt under veranda LED lights have 17 watts in the ballast field as well as the wattage field, leading to over submission of 11,182 kWh per annum,
- Three 150 watt HPS lights have 14 watts recorded for the ballast instead of 18 watts, leading to under submission of 51 kWh per annum.

On 18 June 2019, the Electricity Authority issued a memo clarifying the memo of 2012 that stated that a monthly snapshot was sufficient to calculate submission from, and confirmed the code requirement to calculate the correct monthly load must:

- take into account when each item of load was physically installed or removed, and
- wash up volumes must take into account where historical corrections have been made to the DUMML load and volumes.

The wattage reports are provided as a snapshot, and this is non-compliant. Genesis completes revision submissions where corrections are required. Genesis is working to develop event-based calculations, which will enable accurate volume calculations where lamps change part way through a month.

Audit outcome

Non-compliant

Non-compliance	Description		
<p>Audit Ref: 2.1 Clause 11(1) of Schedule 15.3</p> <p>From: 01-Sep-22 To: 24-May-23</p>	<p>Submission incorrect for April 2023.</p> <p>On off times are based on a logger located in Taupo and not in Kawerau.</p> <p>Some ballast wattage discrepancies leading to over submission of 11,131 kWh per annum.</p> <p>Submission is based on a snapshot and does not consider historic adjustments.</p> <p>Potential impact: High Actual impact: Medium Audit history: Multiple times Controls: Moderate Breach risk rating: 4</p>		
Audit risk rating	Rationale for audit risk rating		
<p>Medium</p>	<p>The controls have improved during the audit period. A full field audit was conducted and Kawerau DC is now responsive to the audit findings. The controls are rated as moderate.</p> <p>The impact is assessed to be medium, based on the kWh differences described above.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>Genesis has revised submissions for April 2023.</p> <p>Genesis will investigate if any other logger is available which is closer to the one currently being used.</p> <p>Genesis has brought this to the attention of KDC and relies on KDC to accurately maintain their database.</p> <p>Genesis will discuss with KDC to add more details to their database rather than a snapshot so It gives more visibility and changes are clearly indicated to submit volumes more accurately</p>		<p>Continuous Improvement</p>	<p>Identified</p>
Preventative actions taken to ensure no further issues will occur		Completion date	
<p>Genesis will continue to work with the council to help them increase database accuracy.</p>		<p>Continuous Improvement</p>	

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 was recorded against each item of load.

Audit commentary

All items of load now have the ICP 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

The database contains fields for the street address and also GPS coordinates. All items of load have GPS coordinates.

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 it contained a field for lamp type and wattage capacity and included any ballast or gear wattage and that each item of load had a value recorded in these fields.

Audit commentary

The database contains fields for lamp and gear wattage. There were no fields with data missing. The accuracy of the gear wattage 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

The field audit was undertaken of a statistical sample of 261 items of load on 26th April 2023.

Audit commentary

There were 32 field audit discrepancies (12%), and a spreadsheet of the findings has been supplied with this report. The table below shows a summary of findings.

Finding	Quantity
Additional lights in the field	5
Lights missing from the field	1
Incorrect wattage	26

Five additional lights were found in the field, which is recorded as non-compliance. The accuracy of the field audit is discussed in **section 3.1**.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.5 With: Clause 11(2A) of Schedule 15.3 From: 01-Sep-22 To: 24-May-23	Five additional lights in the field 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>The controls are recorded as moderate because they mitigate risk most of the time but there is room for improvement.</p> <p>The impact on settlement and participants is minor; therefore the audit risk rating is low.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
Genesis has informed KDC of the auditors finding with the intent that KDC makes every effort to ensure the exceptions are rectified.		01/09/2023	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Genesis relies on KDC to accurately maintain its database.		01/09/2023	

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 DUMML 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	Kawerau District Council streetlights in and around Kawerau
Strata	The database contains 923 items of load in the Kawerau DC area. The processes for the management of all Kawerau DC items of load is the same. I selected the following strata: <ul style="list-style-type: none"> • roads A-F, • roads G-I, • roads J-O, • roads P-R and • roads s-Z.
Area units	I created a pivot table of the roads in each database and used a random number generator in each spreadsheet to select a total of 53 sub-units.
Total items of load	261 items of load were checked.

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

Audit commentary

Database accuracy based on the field audit

A field audit was conducted of a statistical sample of 210 items of load. The “database auditing tool” was used to analyse the results, which are shown in the table below.

Result	Percentage	Comments
The point estimate of R	101.5	Wattage from survey is higher than the database wattage by 1.5%
R _L	99.6	With a 95% level of confidence, it can be concluded that the error could be between -0.4% and 3.9%
R _H	103.9	

These results were categorised in accordance with the “Distributed Unmetered Load Statistical Sampling Audit Guideline”, effective from 1 February 2019 and the table below shows that Scenario A (detailed below) applies.

The conclusion from Scenario A is that the best available estimate indicates that the database is accurate within +/- 5 %.

In absolute terms the installed capacity is estimated to be 1.0 kW higher than the database indicates.

There is a 95% level of confidence that the installed capacity is between 0.0 kW to 2.0 kW higher than the database.

In absolute terms, total annual consumption is estimated to be 2,900 kWh higher than the DUML database indicates.

There is a 95% level of confidence that the annual consumption is between 700 kWh p.a. lower to 7,800 kWh p.a. higher than the database indicates.

Scenario	Description
A - Good accuracy, good precision	This scenario applies if: (a) R_H is less than 1.05; and (b) R_L is greater than 0.95 The conclusion from this scenario is that: (a) the best available estimate indicates that the database is accurate within +/- 5 %; and (b) this is the best outcome.
B - Poor accuracy, demonstrated with statistical significance	This scenario applies if: (a) the point estimate of R is less than 0.95 or greater than 1.05 (b) as a result, either R_L is less than 0.95 or R_H is greater than 1.05. There is evidence to support this finding. In statistical terms, the inaccuracy is statistically significant at the 95% level
C - Poor precision	This scenario applies if: (a) the point estimate of R is between 0.95 and 1.05 (b) R_L is less than 0.95 and/or R_H is greater than 1.05 The conclusion from this scenario is that the best available estimate is not precise enough to conclude that the database is accurate within +/- 5 %

Lamp description and capacity accuracy

The database was checked against the published standardised wattage table.

All lamp wattages were correct, but there were some ballast wattage discrepancies, as follows:

- 154 17 watt under veranda LED lights have 17 watts in the ballast field as well as the wattage field, leading to over submission of 11,182 kWh per annum,
- Three 150 watt HPS lights have 14 watts recorded for the ballast instead of 18 watts, leading to under submission of 51 kWh per annum.

As recorded in the last three audits, festive lights are connected to the unmetered streetlight circuits but are not tracked in RAMM. I was unable to determine the specific impact on reconciliation, but the volume of lights associated with this is small. I am repeating the recommendation to maintain visibility.

Description	Recommendation	Audited party comment	Remedial action
Database accuracy	Record festive lights in RAMM.	Genesis has brought this to the attention of KDC to add festive lights to RAMM so volume is recorded	Identified

NZTA lighting

NZTA lighting is included in the database for the urban area and was checked as part of the field audit.

ICP accuracy

ICP details are correct in the database.

Location accuracy

The database contains fields for the street address and also GPS coordinates and all were populated.

Change management process findings

The processes were reviewed for ensuring that changes in the field are captured. The field work and database management are carried out by Horizon.

During the last audit, it was reported that there were two new areas where the lights were not all recorded against the new roads. The roads are Piripiri Cres and Tiwhatiwha Cres. Piripiri Cres now has all lights recorded, but Tiwhatiwha Cres still appears to have two missing. The new connections process has been reviewed and will now involve a field visit to ensure all lights are correctly recorded. Tiwhatiwha Cres will be investigated.

Whilst the database is deemed to be accurate, there were still a high number of minor discrepancies. The contract requires that a field audit is undertaken annually, and it is expected that the accuracy will improve. The discrepancies identified in this audit will be checked and updated.

As recorded in the last audit identified 26 new 85-watt LED lights on Anaru Drive and the intersection of Anaru Drive and Kawerau Rd. 17 of these lights may be the responsibility of NZTA which is subject to a different audit but there are nine which are not on the highway and will be the responsibility of KDC. None of these have been added to the database, leading to a potential under submission of 3,267 kWh per annum. It is not known if these lights are livened or not, therefore Kawerau DC intends to investigate.

Description	Recommendation	Audited party comment	Remedial action
Database accuracy	Check lights on Anaru Drive and Tiwhatiwha Cres to confirm if they are livened and if so, update the database.	Genesis has brought this to the attention of KDC and relies on them to accurately maintain their database.	Identified

KDC have fortnightly outage patrols in place. The frequency of these patrols is expected to be extended once the Cree lights that are failing have been replaced.

There are no known private lights connected.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 3.1 With: Clause 15.2 and 15.37B(b) From: 01-Sep-22 To: 24-May-23	Festive lighting is connected but the volume is not recorded. Some ballast wattage discrepancies leading to over submission of 11,131 kWh per annum. Potential impact: High Actual impact: Medium Audit history: Multiple times Controls: Moderate Breach risk rating: 4		
Audit risk rating	Rationale for audit risk rating		
Medium	The controls have improved during the audit period. A full field audit was conducted and Kawerau DC is now responsive to the audit findings. The controls are rated as moderate. The impact is assessed to be medium, based on the kWh differences described above.		
Actions taken to resolve the issue		Completion date	Remedial action status
Genesis has brought this to the attention on KDC to add festive lighting to RAMM. Genesis has advised KDC to update correct ballast in RAMM and provide an updated dataset so submission can be revised accordingly		01/09/2023	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Genesis will continue to work with the council to help them increase database accuracy.		Continuous Improvement	

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 the ICP has 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

Genesis reconciles this DUML load using the NST profile. The database extract provided each month is being used to calculate the kW figure. Genesis has a compliant process for calculating monthly kWh, however a processing error for April 2023 resulted in under submission by approximately 1,000 kWh. This has been corrected and the revision process will ensure submission is correct.

A logger in Taupo on the Unison network is being used to calculate the burn hours and these burn hours are being used. This is likely to be more accurate than the previous 11.9 hours daily burn hour figure that was being used but is not accurate as it is on a different network. KDC intends to move away from the ripple relay to daylight sensors in each light. I recommend that Genesis work with KDC to ensure that the correct burn hours are applied, and a suitable profile is in place for submission. No time frame was given as to when this will be deployed.

The field audit found the database was accurate to within +/- 5%.

A 100% field audit has been conducted, but there were still some database discrepancies, as follows:

- 154 17 watt under veranda LED lights have 17 watts in the ballast field as well as the wattage field, leading to over submission of 11,182 kWh per annum,
- Three 150 watt HPS lights have 14 watts recorded for the ballast instead of 18 watts, leading to under submission of 51 kWh per annum.

On 18 June 2019, the Electricity Authority issued a memo clarifying the memo of 2012 that stated that a monthly snapshot was sufficient to calculate submission from, and confirmed the code requirement to calculate the correct monthly load must:

- take into account when each item of load was physically installed or removed, and
- wash up volumes must take into account where historical corrections have been made to the DUML load and volumes.

The wattage reports are provided as a snapshot, and this is non-compliant. Genesis completes revision submissions where corrections are required. Genesis is working to develop event-based calculations, which will enable accurate volume calculations where lamps change part way through a month.

Audit outcome

Non-compliant

Non-compliance	Description		
<p>Audit Ref: 3.2</p> <p>Clause 15.2 and 15.37B(c)</p> <p>From: 01-Sep-22</p> <p>To: 24-May-23</p>	<p>Submission incorrect for April 2023.</p> <p>On off times are based on a logger located in Taupo and not in Kawerau.</p> <p>Some ballast wattage discrepancies leading to over submission of 11,131 kWh per annum.</p> <p>Submission is based on a snapshot and does not consider historic adjustments.</p> <p>Potential impact: High</p> <p>Actual impact: Medium</p> <p>Audit history: Multiple times</p> <p>Controls: Moderate</p> <p>Breach risk rating: 4</p>		
Audit risk rating	Rationale for audit risk rating		
<p>Medium</p>	<p>The controls have improved during the audit period. A full field audit was conducted and Kawerau DC is now responsive to the audit findings. The controls are rated as moderate.</p> <p>The impact is assessed to be medium, based on the kWh differences described above.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>Genesis has revised submissions for April 2023.</p> <p>Genesis will investigate if any other logger is available which is closer to the one currently being used.</p> <p>Genesis has brought this to the attention of KDC and relies on KDC to accurately maintain their database.</p> <p>Genesis will discuss with KDC to add more details to their database rather than a snapshot so It gives more visibility and changes are clearly indicated to submit volumes more accurately</p>		<p>Continuous Improvement</p>	<p>Identified</p>
Preventative actions taken to ensure no further issues will occur		Completion date	
<p>Genesis will continue to work with the council to help them increase database accuracy.</p>		<p>Continuous Improvement</p>	

CONCLUSION

The scope of the audit encompasses the collection, security and accuracy of the data, including the preparation of submission information. The field work and management of the RAMM database is carried out by Horizon.

The management of the RAMM database and associated field processes has changed during the audit period and the database accuracy has improved as a result. Whilst the field audit determined the database was accurate to within +/- 5%, there are still some discrepancies to resolve to achieve full accuracy.

This audit found five non-compliances and makes two recommendations. The future risk rating of 15 indicates that the next audit be completed in 12 months. I agree with this recommendation.

PARTICIPANT RESPONSE

Genesis continues to build on their relationship with the council. Genesis has been working with KDC to improve database accuracy and have more engagement with the council. This should be reflected in the April-2023 database submitted.