

ELECTRICITY INDUSTRY PARTICIPATION CODE
DISTRIBUTED UNMETERED LOAD AUDIT REPORT



For

NZ TRANSPORT AGENCY WAKA KOTAHI
NORTHLAND DISTRIBUTED UNMETERED
LOAD

GENESIS ENERGY

NZBN:9429037706609

Auditor: Brett Piskulic

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Audit report due date: 15 September 2024

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EXECUTIVE SUMMARY

This audit of the **NZ Transport Agency Waka Kotahi (NZTA)** Northland Streetlight 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.

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

At the time of the previous audit, a RAMM database was held by NZTA, and remotely hosted by thinkproject New Zealand Limited (formerly RAMM NZ Ltd). NZ Streetlighting was responsible for updating the database and the provision of a monthly extract to Genesis. Installation, maintenance and fault work is completed by NZTA's contractor Fulton Hogan and its subcontractors who recorded changes on forms which were returned, and the data was entered into RAMM by NZ Streetlighting. I attempted to verify any process changes with NZ Streetlighting but had not received a response by the time the draft report needed to be issued. Genesis confirmed that monthly reports are received from NZ Streetlighting and provided the April 2024 report for this audit.

The field audit was undertaken of a statistical sample of 210 items of load between 7 and 21 July 2024. A high number of inaccuracies were identified, and the results of the field audit concluded that in absolute terms, total annual consumption is estimated to be 33,900 kWh lower than the DUML database indicates.

I reviewed the findings of the previous audit and found that 83 of the 93 accuracy issues identified had not been corrected in the database resulting in a nett estimated over submission of 14,773 kWh per annum.

The future risk rating of 18 indicates that the next audit be completed in six months. I have considered this in conjunction with the response from Genesis and agree with this recommendation.

This audit found three non-compliances and makes no recommendations. 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
Deriving submission information	2.1	11(1) of schedule 15.3	<p>The data used for submission does not track changes at a daily basis and is provided as a snapshot.</p> <p>The field audit found that the database is not confirmed as accurate within +/- 5%. In absolute terms, total annual consumption is estimated to be 33,900 kWh lower than the DUML database indicates.</p> <p>Database accuracy issues identified in last audit not corrected, resulting in a nett estimated over submission of 14,773 kWh per annum.</p> <p>One item of load has the incorrect wattage applied in the DUML database which would result in under submission of 42.71kWh per annum.</p>	Weak	Medium	6	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Database accuracy	3.1	15.2 and 15.37B(b)	<p>The field audit found that the database is not confirmed as accurate within +/- 5%. In absolute terms, total annual consumption is estimated to be 33,900 kWh lower than the DUML database indicates.</p> <p>Database accuracy issues identified in last audit not corrected, resulting in a nett estimated over submission of 14,773 kWh per annum.</p> <p>One item of load has the incorrect wattage applied in the DUML database which would result in under submission of 42.71 kWh per annum.</p>	Weak	Medium	6	Identified
Volume information accuracy	3.2	15.2 and 15.37B(c)	<p>The data used for submission does not track changes at a daily basis and is provided as a snapshot.</p> <p>The field audit found that the database is not confirmed as accurate within +/- 5%. In absolute terms, total annual consumption is estimated to be 33,900 kWh lower than the DUML database indicates.</p> <p>Database accuracy issues identified in last audit not corrected, resulting in a nett estimated over submission of 14,773 kWh per annum.</p> <p>One item of load has the incorrect wattage applied in the DUML database which would result in under submission of 42.71kWh per annum.</p>	Weak	Medium	6	Identified
Future Risk Rating						18	

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	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

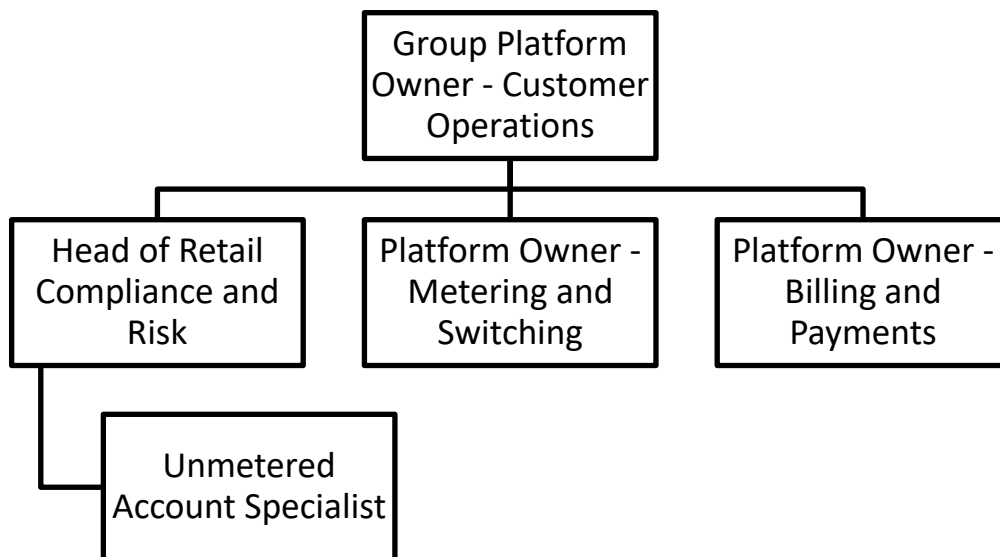
The Electricity Authority's website was reviewed to identify any exemptions relevant to the scope of this audit.

Audit commentary

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

1.2. Structure of Organisation

Genesis provided the relevant organisational structure:



1.3. Persons involved in this audit

Auditor:

Name	Company	Role
Brett Piskulic	Provera	Auditor

Other personnel assisting in this audit were:

Name	Title	Company
Alysha Majury	Unmetered Account Specialist	Genesis Energy

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 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	NSP	Profile	Number of items of load	Database wattage (watts)
0000500015NRA63	Streetlights; Transit NZ; BRB0331	BRB0331	GSL	37	6,601
0000500236NR1F1	STREETLIGHTS; TRANSIT NZ; MPE1101	MPE1101	GSL	704	126,265.5
0000545297NR91E	Streetlights; Transit NZ; MTO0331	MTO0331	GSL	132	21,638
0000913800TE1B9	NZTA Waka Kotahi DUML GXP KOE1101	KOE1101	GSL	659	93,925
TOTAL				1,532	247,889.5

The ballast values are included in the wattage totals.

1.7. Authorisation Received

All information was provided directly by Genesis.

1.8. Scope of Audit

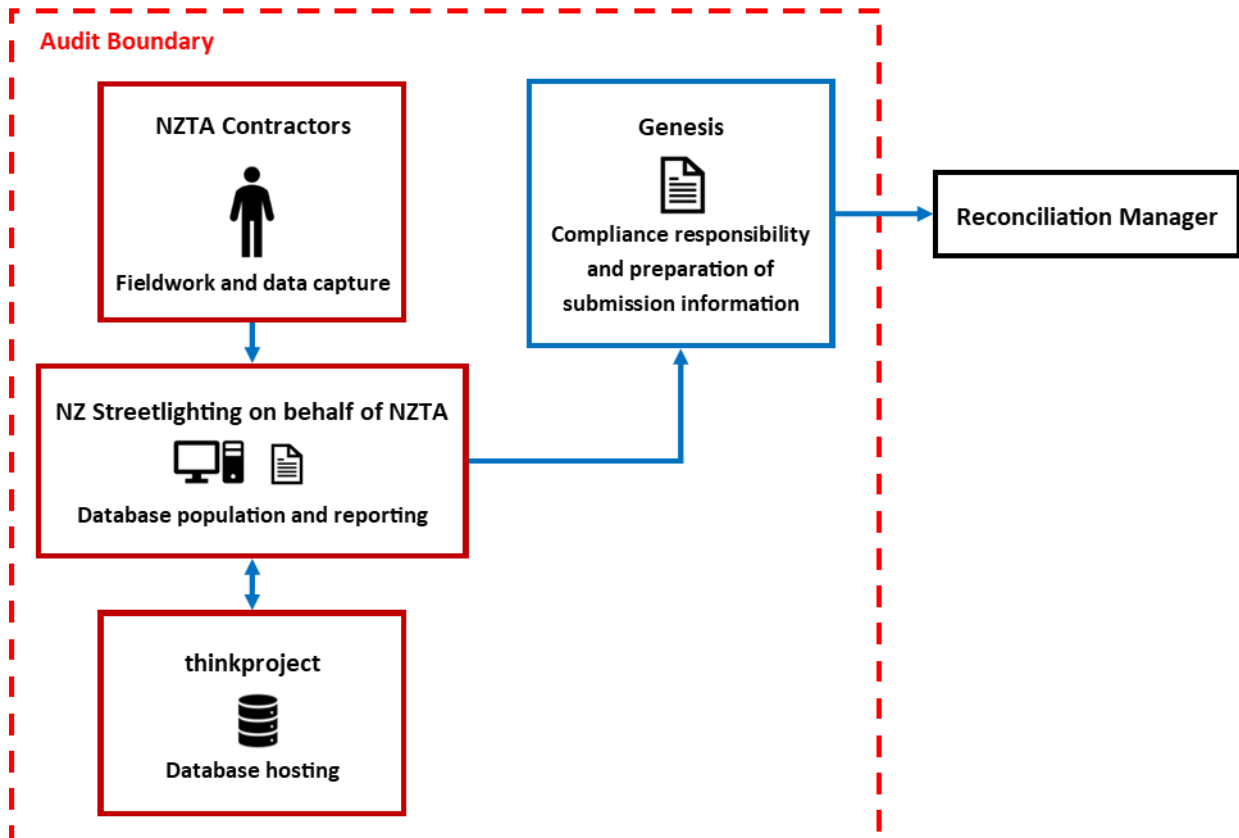
This audit of the NZTA Northland Streetlight DUML database and processes was conducted at the request of Genesis Energy (Genesis), in accordance with clause 15.37B. The purpose of this audit is to verify that the volume information is being calculated accurately, and that profiles have been correctly applied.

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

NZTA Northland Unmetered Streetlights are located on the Northpower and Top Energy networks. Genesis reconciles this load using the NZTA RAMM streetlight database.

At the time of the previous audit, a RAMM database was held by NZTA, and remotely hosted by thinkproject New Zealand Limited (formerly RAMM NZ Ltd). NZ Streetlighting was responsible for updating the database and the provision of a monthly extract to Genesis. Installation, maintenance and fault work is completed by NZTA's contractor Fulton Hogan and its subcontractors who recorded changes on forms which were returned, and the data was entered into RAMM by NZ Streetlighting. I attempted to verify any process changes with NZ Streetlighting but had not received a response by the time the draft report needed to be issued.

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 210 items of load between 7 and 21 July 2024.

1.9. Summary of previous audit

The previous audit was completed in September 2023 by Tara Gannon and Brett Piskulic of Provera. The current statuses of this audit's findings are detailed below:

Table of Non-Compliance

Subject	Section	Clause	Non-compliance	Status
DUML Audit	1.10	17.295F of part 17	Audit not completed within the required timeframe.	Cleared
Deriving submission information	2.1	11(1) of Schedule 15.3	The field audit found that the database is not confirmed as accurate within +/- 5%. In absolute terms, total annual consumption is estimated to be 60,400 kWh lower than the DUML database indicates. Nine items of load have the incorrect wattage applied in the DUML database which would result in over submission of 247.72kWh per annum.	Still existing
All load recorded in database	2.5	11(2)(b) of Schedule 15.3	16 additional lights were found in the field.	No new examples found in this audit
Database accuracy	3.1	15.2 and 15.37B(b)	The field audit found that the database is not confirmed as accurate within +/- 5%. In absolute terms, total annual consumption is estimated to be 60,400 kWh lower than the DUML database indicates. Nine items of load have the incorrect wattage applied in the DUML database which would result in over submission of 247.72kWh per annum.	Still existing
Volume information accuracy	3.2	15.2 and 15.37B(c)	The field audit found that the database is not confirmed as accurate within +/- 5%. In absolute terms, total annual consumption is estimated to be 60,400 kWh lower than the DUML database indicates. Nine items of load have the incorrect wattage applied in the DUML database which would result in over submission of 247.72kWh per annum.	Still existing

Table of Recommendations

Subject	Section	Recommendation for Improvement	Status
		Nil	

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 Provera to undertake this streetlight audit.

Audit commentary

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

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:

- 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.

Audit commentary

Submission process and accuracy

Genesis reconciles this DUMML load using the GSL profile. The on and off times are derived from a data logger.

The total volume submitted to the Reconciliation Manager is based on a monthly NZTA RAMM extract provided by NZ Streetlighting. On-off times are determined by a data logger, Genesis provided the datalogger files for April 2024. I compared the database extract provided to the submission information provided by Genesis for April 2024 and confirmed that the database total matches the submission total.

On 18 June 2019, the Electricity Authority issued a memo confirming that 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 current data used is a snapshot as the information provided in the monthly reports does not contain sufficient information for wattage changes on a daily basis and this practice is non-compliant.

Database accuracy

Examination of the database found:

Issue	Estimated volume information impact (annual kWh)
The database is not confirmed as accurate with a 95% level of confidence as recorded in section 3.1	Over submission of 33,900 kWh p.a.
Database accuracy issues identified in last audit not corrected, as recorded in section 3.1	Over submission of 14,773 kWh p.a.
One item of load has the incorrect wattage applied in the DUMML database. This is detailed in section 3.1	Under submission of 42.71kWh p.a.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 2.1 With: Clause 11(1) of schedule 15.3 From: 05-Jun-24 To: 21-Jul-24	<p>The data used for submission does not track changes at a daily basis and is provided as a snapshot.</p> <p>The field audit found that the database is not confirmed as accurate within +/- 5%. In absolute terms, total annual consumption is estimated to be 33,900 kWh lower than the DUML database indicates.</p> <p>Database accuracy issues identified in last audit not corrected, resulting in a nett estimated over submission of 14,773 kWh per annum.</p> <p>One item of load has the incorrect wattage applied in the DUML database which would result in under submission of 42.71kWh per annum.</p> <p>Potential impact: High Actual impact: Medium Audit history: Multiple times</p> <p>Controls: Weak Breach risk rating: 6</p>		
Audit risk rating	Rationale for audit risk rating		
Medium	Controls are rated as weak as the database has a high level of inaccuracy. The impact is assessed to be medium due to the kWh volumes.		
Actions taken to resolve the issue		Completion date	Remedial action status
Genesis continues to notify and provide NZTA with the audit findings and discrepancies identified and has continued to strongly recommend these are investigated and updated in their system.		Continuous Improvement	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Genesis continues to notify and provide NZTA with the audit findings and discrepancies identified and has continued to strongly recommend these are investigated and updated in their system.		Continuous Improvement	

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 had an ICP recorded in the database.

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 DUMML database must contain the location of each DUMML item.

Audit observation

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

Audit commentary

The database has the road name, location, carriageway number, offset side, and GPS location for all items of load.

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 DUMML 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

The database contains fields to record the lamp make, model, wattage and gear wattage. All items of load have a lamp model and lamp wattage populated.

The accuracy of lamp descriptions, wattages and ballasts is recorded 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 210 items of load between 7 and 21 July 2024.

Audit commentary

The field audit discrepancies found are detailed in the table below.

Road Name	Database count	Field count	Light count differences	Wattage recorded incorrectly	Comments
015-0111	13	13	-	1	9 x 150W HPS, 2 x 70W HPS and 2 x 146W LED recorded in database. 10 x 150W HPS, 2 x 70W HPS and 1 x 146W LED found in field.
01N-0303	22	22	-	1	16 x 150W HPS, 3 x 250W HPS, 1 x 293W LED, 1 x 29W LED and 1 x 47W LED recorded in database. 15 x 150W HPS, 3 x 250W HPS, 1 x 293W LED, 1 x 146W LED, 1 x 29W LED and 1 x 47W LED found in field.
014-0012	8	8	-	1	5 x 150W HPS, 1 x 37.5W LED and 2 x 169W LED recorded in database. 6 x 150W HPS, 1 x 37.5W LED and 1 x 169W LED found in field.
01N-0258 B	26	26	-	3	2 x 150W HPS, 20 x 250W HPS, 1 x 146W LED and 3 x 107W LED recorded in database. 2 x 150W HPS, 23 x 250W HPS, and 1 x 146W LED found in field.
01N-0258/07.25-D	15	15	-	1	1 x 150W HPS, 4 x 250W HPS, 1 x 70W HPS, 2 x 146W LED and 7 x 107W LED recorded in database. 1 x 150W HPS, 3 x 250W HPS, 1 x 70W HPS, 2 x 146W LED and 8 x 107W LED found in field.
01N-0215	6	6	-	3	4 x 150W HPS and 2 x 71W LED recorded in database. 1 x 150W HPS and 5 x 71W LED found in field

Road Name	Database count	Field count	Light count differences	Wattage recorded incorrectly	Comments
01N-0198 B	29	29	-	6	25 x 150W HPS, 2 x 104W LED and 2 x 71W LED recorded in database. 19 x 150W HPS, 2 x 104W LED and 8 x 71W LED found in field.
010-0063	12	12	-	2	10 x 150W HPS and 2 x 107W LED recorded in database. 8 x 150W HPS and 4 x 107W LED
010-0079	29	29	-	6	9 x 150W HPS, 2 x 70W HPS, 1 x 53W LED, 16 x 107W LED and 1 x 71W LED recorded in database. 6 x 150W HPS, 1 x 70W HPS, 1 x 53W LED, 20 x 107W LED and 1 x 71W LED found in field.
Grand Total	210	210	0	24	

This clause relates to lights in the field that are not recorded in the database. I have recorded compliance as no additional items of load were found in the field that were not recorded in the database.

The database accuracy is 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 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 process for tracking of changes in the database was examined.

Audit commentary

The RAMM database functionality achieves compliance with the code.

The accuracy of the database is discussed in **section 3.1**.

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 DUML 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

RAMM records audit trail information of changes made.

The accuracy of the database is discussed in **section 3.1**.

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	NZTA Northland Streetlights
Strata	<p>The database contains items of load on the Northland state highway network. The processes for the management of all NZTA items of load are the same, but I decided to place the items of load into three strata as follows:</p> <ul style="list-style-type: none"> ICPs 0000500236NR1F1, 0000545297NR91E and 0000500015NRA63 – Kaipara and Whangarei South, ICP 0000500236NR1F1 - Whangarei North, and ICP 0000913800TE1B9.
Area units	I created a pivot table of the roads, and I used a random number generator in a spreadsheet to select a total of 17 sub-units.
Total items of load	210 items of load were checked.

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

The change management process to track changes and timeliness of database updates was evaluated.

Audit commentary

Field audit findings

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	96.8%	Wattage from survey is lower than the database wattage by 3.2%
R _L	93.8%	With a 95% level of confidence, it can be concluded that the error could be between -6.2% and -0.3%.
R _H	99.7%	

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 C (detailed below) applies. The conclusion from Scenario C is that the variability of the sample results across the strata

means that the true wattage (installed in the field) could be between 0.3% and 6.2% lower than the wattage recorded in the DUML database. Non-compliance is recorded because the potential error is greater than 5.0%.

In absolute terms the installed capacity is estimated to be 8 kW lower than the database indicates.

There is a 95% level of confidence that the installed capacity is between 15 kW lower and 1 kW higher than the database.

In absolute terms, total annual consumption is estimated to be 33,900 kWh lower than the DUML database indicates.

There is a 95% level of confidence that the annual consumption is between 65,500 kWh p.a. to 2,900 kWh p.a. lower than the database indicates.

Scenario	Description
A - Good accuracy, good precision	<p>This scenario applies if:</p> <ul style="list-style-type: none"> (a) R_H is less than 1.05; and (b) R_L is greater than 0.95 <p>The conclusion from this scenario is that:</p> <ul style="list-style-type: none"> (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	<p>This scenario applies if:</p> <ul style="list-style-type: none"> (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. <p>There is evidence to support this finding. In statistical terms, the inaccuracy is statistically significant at the 95% level</p>
C - Poor precision	<p>This scenario applies if:</p> <ul style="list-style-type: none"> (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 <p>The conclusion from this scenario is that the best available estimate is not precise enough to conclude that the database is accurate within +/- 5 %</p>

Correction of issues identified in last audit

I reviewed the findings of the previous audit and found that most of the issues identified had not been corrected in the database. I have summarised the status of the issues in the following table.

Issue	Number identified in 2023 audit	Number of issues corrected	Comments
Lamp type or wattage incorrect	65	1	One light was updated.

Issue	Number identified in 2023 audit	Number of issues corrected	Comments
Additional light found in field audit	16	9	Four lights are confirmed as standard unmetered load. Four lights are confirmed as metered. One light was added to the database.
Light not found in field audit	12	-	All 12 lights are still recorded in the database.

I have recorded non-compliance as 83 of the 93 issues identified in the last audit have not been corrected. The remaining issues will be resulting in a nett estimated over submission of 14,773 kWh per annum (based on annual burn hours of 4,271 as is detailed in the DUMML database auditing tool).

Lamp description and capacity accuracy

I checked the wattage being applied in the database and found that one lamp had a discrepancy when compared to the standardised wattage table. This is detailed in the table below:

Lamp Type	Database Total Lamp Wattage	EA Standardised Total Wattage	Variance	Database Quantity	Estimated Annual kWh effect on consumption
250W High Pressure Sodium	268	278	-10	1	42.71

The incorrect capacity will be resulting in a nett estimated under submission of 42.71 kWh per annum (based on annual burn hours of 4,271 as is detailed in the DUMML database auditing tool).

Change management process findings

At the time of the previous audit maintenance and fault work was completed NZTA's contractor Fulton Hogan and its subcontractors. Outage patrols were required to be conducted quarterly. Changes were recorded in a spreadsheet form which was returned to NZ Streetlighting who updated the NZTA RAMM database. The contractors were required to return the information to support the payment of invoices. New connections required the details of new lights to be returned to NZ Streetlighting using the same form used for faults and maintenance along with copies of the Certificate of Compliance (COC) and Record of Inspection (ROI). The database was updated using the liveness date from the ROI.

I attempted to verify any process changes with NZ Streetlighting but had not received a response by the time the draft report needed to be issued.

Festive and private lights

No private lights are recorded in the database.

No festive lights are added to the NZTA DUMML ICPs in the Northland region.

Audit outcome

Non-compliant

Non-compliance	Description		
<p>Audit Ref: 3.1 With: Clause 15.2 and 15.37B(b)</p> <p>From: 05-Jun-24 To: 21-Jul-24</p>	<p>The field audit found that the database is not confirmed as accurate within +/- 5%. In absolute terms, total annual consumption is estimated to be 33,900 kWh lower than the DUML database indicates.</p> <p>Database accuracy issues identified in last audit not corrected, resulting in a nett estimated over submission of 14,773 kWh per annum.</p> <p>One item of load has the incorrect wattage applied in the DUML database which would result in under submission of 42.71 kWh per annum.</p> <p>Potential impact: High Actual impact: Medium Audit history: Multiple times Controls: Weak Breach risk rating: 6</p>		
Audit risk rating	Rationale for audit risk rating		
<p>Medium</p>	<p>Controls are rated as weak as the database has a high level of inaccuracy. The impact is assessed to be medium due to the kWh volumes.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>Genesis and the auditors have continued to recommend a full audit be carried out. NZTA have advised there is no funding for a full field audit to be carried out and due to NZTA going under a new maintenance model change with an expected live date of March 2026, this is very unlikely to take place before then.</p> <p>Genesis continues to notify and provide NZTA with the audit findings and discrepancies identified and has continued to strongly recommend these are investigated and updated in their system.</p>		<p>Continuous Improvement</p>	<p>Identified</p>
Preventative actions taken to ensure no further issues will occur		Completion date	
<p>Genesis and the auditors have continued to recommend a full audit be carried out. NZTA have advised there is no funding for a full field audit to be carried out and due to NZTA going under a new maintenance model change with an expected live date of March 2026, this is very unlikely to take place before then.</p> <p>Genesis continues to notify and provide NZTA with the audit findings and discrepancies identified and has continued to strongly recommend these are investigated and updated in their system.</p>		<p>Continuous Improvement</p>	

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

Submission process and accuracy

Genesis reconciles this DUML load using the GSL profile. The on and off times are derived from a data logger.

The total volume submitted to the Reconciliation Manager is based on a monthly NZTA RAMM extract provided by NZ Streetlighting. On-off times are determined by a data logger, Genesis provided the datalogger files for April 2024. I compared the database extract provided to the submission information provided by Genesis for April 2024 and confirmed that the database total matches the submission total.

On 18 June 2019, the Electricity Authority issued a memo confirming that 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 current data used is a snapshot as the information provided in the monthly reports does not contain sufficient information for wattage changes on a daily basis and this practice is non-compliant.

Database accuracy

Examination of the database found:

Issue	Estimated volume information impact (annual kWh)
The database is not confirmed as accurate with a 95% level of confidence as recorded in section 3.1	Over submission of 33,900 kWh p.a.
Database accuracy issues identified in last audit not corrected, as recorded in section 3.1	Over submission of 14,773 kWh p.a.
One item of load has the incorrect wattage applied in the DUML database. This is detailed in section 3.1	Under submission of 42.71kWh p.a.

Audit outcome

Non-compliant

Non-compliance	Description		
<p>Audit Ref: 3.2 With: Clause 15.2 and 15.37B(c)</p> <p>From: 05-Jun-24 To: 21-Jul-24</p>	<p>The data used for submission does not track changes at a daily basis and is provided as a snapshot.</p> <p>The field audit found that the database is not confirmed as accurate within +/- 5%. In absolute terms, total annual consumption is estimated to be 33,900 kWh lower than the DUML database indicates.</p> <p>Database accuracy issues identified in last audit not corrected, resulting in a nett estimated over submission of 14,773 kWh per annum.</p> <p>One item of load has the incorrect wattage applied in the DUML database which would result in under submission of 42.71kWh per annum.</p> <p>Potential impact: High Actual impact: Medium Audit history: Multiple times Controls: Weak Breach risk rating: 6</p>		
Audit risk rating	Rationale for audit risk rating		
<p>Medium</p>	<p>Controls are rated as weak as the database has a high level of inaccuracy. The impact is assessed to be medium due to the kWh volumes.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>Genesis and the auditors have continued to recommend a full audit be carried out. NZTA have advised there is no funding for a full field audit to be carried out and due to NZTA going under a new maintenance model change with an expected live date of March 2026, this is very unlikely to take place before then.</p> <p>Genesis continues to notify and provide NZTA with the audit findings and discrepancies identified and has continued to strongly recommend these are investigated and updated in their system.</p>		<p>Continuous Improvement</p>	<p>Identified</p>
Preventative actions taken to ensure no further issues will occur		Completion date	
<p>Genesis and the auditors have continued to recommend a full audit be carried out. NZTA have advised there is no funding for a full field audit to be carried out and due to NZTA going under a new maintenance model change with an expected live date of March 2026, this is very unlikely to take place before then.</p> <p>Genesis continues to notify and provide NZTA with the audit findings and discrepancies identified and has continued to strongly recommend these are investigated and updated in their system.</p>		<p>Continuous Improvement</p>	

CONCLUSION

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

At the time of the previous audit, a RAMM database was held by NZTA, and remotely hosted by thinkproject New Zealand Limited (formerly RAMM NZ Ltd). NZ Streetlighting was responsible for updating the database and the provision of a monthly extract to Genesis. Installation, maintenance and fault work is completed by NZTA's contractor Fulton Hogan and its subcontractors who recorded changes on forms which were returned, and the data was entered into RAMM by NZ Streetlighting. I attempted to verify any process changes with NZ Streetlighting but had not received a response by the time the draft report needed to be issued. Genesis confirmed that monthly reports are received from NZ Streetlighting and provided the April 2024 report for this audit.

The field audit was undertaken of a statistical sample of 210 items of load between 7 and 21 July 2024. A high number of inaccuracies were identified, and the results of the field audit concluded that in absolute terms, total annual consumption is estimated to be 33,900 kWh lower than the DUML database indicates.

I reviewed the findings of the previous audit and found that 83 of the 93 accuracy issues identified had not been corrected in the database resulting in a nett estimated over submission of 14,773 kWh per annum.

The future risk rating of 18 indicates that the next audit be completed in six months. I have considered this in conjunction with the response from Genesis and agree with this recommendation.

PARTICIPANT RESPONSE

Genesis agrees with the audit findings.

Genesis continues to work with NZTA in increasing their database and continue to notify them of the audit findings and any discrepancies found for these to be investigated and updated in their database.

NZTA have advised that they do not have the funding available for a full field audit to be carried out and they are currently going through a maintenance model change that is expected to go live in March 2026. Due to this NZTA have expressed there will be very little change made in their current process which includes no strict quality checks on field updates or new connections. NZTA are relying on their contractors to make accurate updates.

Genesis continues to recommend that as a minimum the discrepancies identified during the field audit be investigated and updated in their system.