ELECTRICITY INDUSTRY PARTICIPATION CODE
DISTRIBUTED UNMETERED LOAD AUDIT REPORT

For

WHAKATANE DISTRICT COUNCIL
AND GENESIS ENERGY
NZBN: 9429037706609

Prepared by: Steve Woods

Date audit commenced: 27 May 2024

Date audit report completed: 27 June 2024

Audit report due date: 25 June 2024

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EXECUTIVE SUMMARY

This audit of the **Whakatane District Council (WDC)** 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.

Genesis reconciles this DUML load using the UNM profile for one ICP (1000023060BP0E2) and the NST profile for remaining two ICPs (1000023042BPD32 and 1000023047BP07D).

The previous audit recorded that two ICPs with no items of load were recorded in the RAMM database. These ICPs have now been removed from the database, but submission is still occurring for ICP 1000023042BPD32. ICP 1000023061BPCA7 has now been decommissioned.

The NST profile requires that a data logger be used to calculate the volumes, but the registry figure is being used for submission. Non-compliance for the incorrect profile is recorded for ICPs 1000023047BP07D and 1000023042BPD32. In addition, the NST profile was deemed unsuitable for use during the recent profile audit.

Genesis continues to use the registry figures and UML or NST profile to calculate submissions. I compared the database extract against the registry figures and found a variance resulting in an estimated annual under submission 114,261 kWh. I recommend that WDC provide a monthly report from RAMM to Genesis to use for submission. In the long-term Genesis intends to start using the output from WDC's Telensa system for on/off times and possibly for wattage information. The wattage information will need to be checked for accuracy first, because lamps of the same rated wattage do not all have the same reported wattage in Telensa.

This audit found three non-compliances and makes three recommendations. The future risk rating of 20 indicates that the next audit be completed in three months. I have considered this in conjunction with Genesis' comments and recommend that the next audit be conducted in nine 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	11 items of load submitted on both ICP 1000023042BPD32 and 1000023060BP0E2 resulting in an estimated over submission of 7,850 kWh since February 2020 to date. Incorrect NST profile applied to ICPs 1000023047BP07D and 1000023042BPD32. NST profile is no longer suitable for use as recorded in the 2023 profile audit. Actual on/off times are different to the fixed 11.9 hours used by Genesis. Variance found between the kWh figure submitted by Genesis and the RAMM database extract, resulting in an estimated annual under submission 114,261 kWh per annum. No database reporting is being provided and therefore changes made in the database are not reflected in submissions.	Weak	High	9	Investigating
Database accuracy	3.1	15.2 and 15.37B(b)	10 items of load with insufficient light description of "LED" and actual wattages are unknown. New connections are recorded from the time of vesting, not from the time of livening.	Moderate	Low	2	Investigating

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Volume information accuracy	3.2	15.2 and 15.37B(c)	11 items of load submitted on both ICP 1000023042BPD32 and 1000023060BP0E2 resulting in an estimated over submission of 7,850 kWh since February 2020 to date. Incorrect NST profile applied to ICPs 1000023047BP07D and 1000023042BPD32. NST profile is no longer suitable for use as recorded in the 2023 profile audit. Actual on/off times are different to the fixed 11.9 hours used by Genesis. Variance found between the kWh figure submitted by Genesis and the RAMM database extract, resulting in an estimated annual under submission 114,261 kWh per annum. No database reporting is being provided and therefore changes made in the database are not reflected in submissions	Weak	High	9	Investigating
Future Risk Rating						20	

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	Recommendation
Deriving submission information	2.1	WDC provide a monthly report from RAMM to Genesis to use for submission. Genesis to investigate with WDC to get a burn hours report from Telensa until it can be used for monthly reporting.
Database accuracy	3.1	Genesis to liaise with WDC and Horizon to ensure streetlight livening dates are captured in RAMM in a timely manner.

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

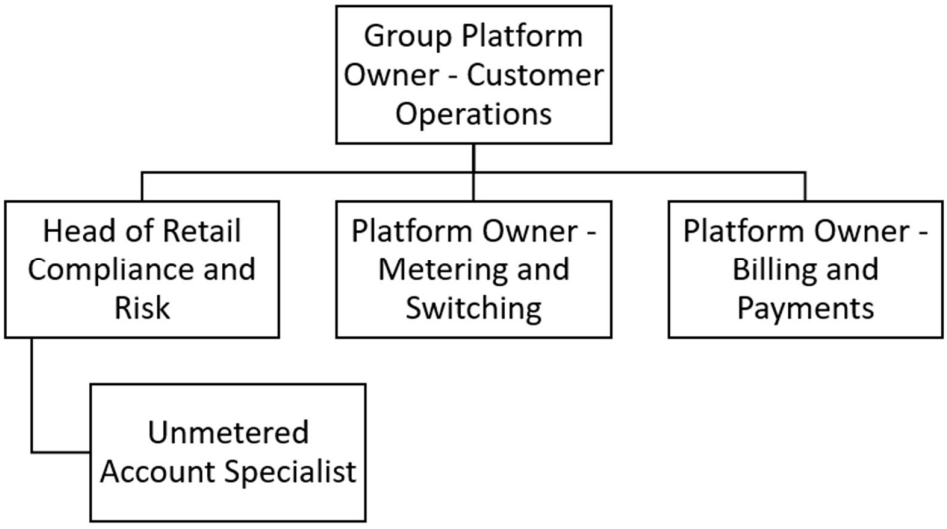
The Electricity Authority's website was reviewed to identify any exemptions relevant to the scope of this audit.

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:

Rebecca Elliot

Veritek Limited

Electricity Authority Approved Auditor

Other personnel assisting in this audit were:

Name	Title	Company
Alysha Majury	Unmetered Account Specialist	Genesis
Ella Barnfield	Contracts Engineer – Transportation	Whakatane DC

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)
1000023042BPD32	Amenity Lights WDC	EDG0331	NST	0	0
1000023060BP0E2	Ruatahuna Streetlights	EDG0331	UNM	193	10,761
1000023047BP07D	Whakatane Streetlights	EDG0331	NST	2,346	121,419
Total				2,539	132,180

The previous audit recorded that two ICPs with no items of load were recorded in the RAMM database. These ICPs have now been removed from the database, but as recorded in sections 2.1 and 3.1, submission is still occurring for ICP 1000023042BPD32. ICP 1000023061BPCA7 has now been decommissioned.

11 lights in Ruatahuna should be recorded against ICP 1000023042BPD32 in the database as these are not connected to Telensa so their off and on times are controlled by the network relays. Genesis updated the daily unmetered kWh in the registry for these lights on 1 April 2021, backdated to 1 October 2019 but the lights are also included in the unmetered load for ICP 1000023060BP0E2 resulting in an estimated over submission to the market as detailed in sections 2.1 and 3.2.

1.7. Authorisation Received

All information was provided directly by Genesis and WDC.

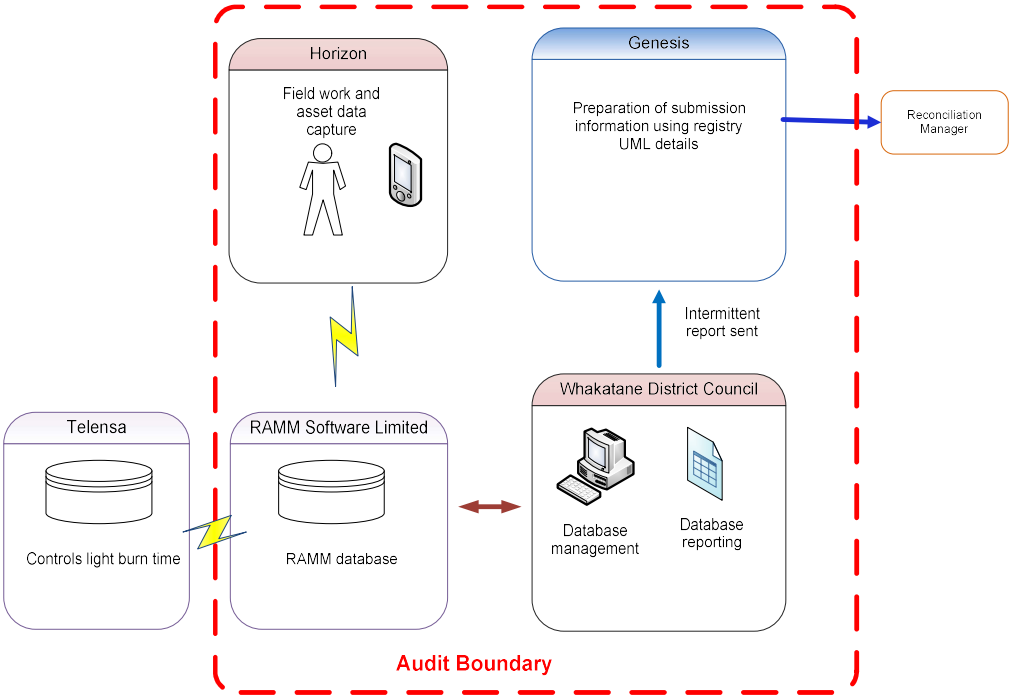
1.8. Scope of Audit

This audit of the **Whakatane District Council** (**WDC**) 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.

Horizon is engaged by WDC and conducts the fieldwork and asset data capture. WDC have a central management system called Telensa. It controls the light burn times and has replaced the network relays previously used for all but 11 lights. Genesis does not use the output from this system; therefore, I did not check the accuracy of the reporting. Genesis still uses the registry figures for submission.

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 226 items of load on 07 June 2024.

1.9. Summary of previous audit

The previous audit was completed in August 2023 by Rebecca Elliot of Veritek Limited. The last audit found four non-compliances and made one recommendation. The current status of that audit's findings is detailed below:

Table of Non-Compliance

Subject	Section	Clause	Non-compliance	Status
Deriving submission information	2.1	11(1) of Schedule 15.3	ICP 1000023061BPCA7 has no unmetered load associated but has not been decommissioned resulting in an estimated over submission of 9,248 kWh occurring since September 2020 to date.	Cleared
			11 items of load submitted on both ICP 1000023042BPD32 and 1000023060BP0E2 resulting in an estimated over submission of 7,850 kWh since February 2020 to date.	Still existing
			Incorrect NST profile applied to ICPs 1000023047BP07D and 1000023042BPD32.	Still existing
			Actual on/off times are different to the fixed 11.9 hours used by Genesis.	Still existing
			Variance found between the kWh figure submitted by Genesis and the RAMM database extract, resulting in an estimated annual under submission 134,438 kWh per annum.	Still existing
			No database reporting is being provided and therefore changes made in the database are not reflected in submissions.	Still existing
Location of each item of load	2.3	11(2)(b) of Schedule 15.3	Two items of load not readily locatable.	Cleared
All load recorded in the database	2.5	11(2A) of Schedule 15.3	Four additional items of load were found.	Cleared
Database accuracy	3.1	15.2 and 15.37B(b)	Two items of load not readily locatable.	Cleared
			Four items of load with insufficient light description of "LED" and actual wattages are unknown. This will be resulting in a very minor amount of incorrect submission.	
			New connections are recorded from the time of vesting, not from the time of livening.	

Subject	Section	Clause	Non-compliance	Status
Volume information accuracy	3.2	15.2 and 15.37B(c)	ICP 1000023061BPCA7 has no unmetered load associated but has not been decommissioned resulting in an estimated over submission of 9,248 kWh occurring since September 2020 to date.	Cleared
			11 items of load submitted on both ICP 1000023042BPD32 and 1000023060BP0E2 resulting in an estimated over submission of 7,850 kWh since February 2020 to date.	Still existing
			Incorrect NST profile applied to ICPs 1000023047BP07D and 1000023042BPD32.	Still existing
			Actual on/off times are different to the fixed 11.9 hours used by Genesis.	Still existing
			Variance found between the kWh figure submitted by Genesis and the RAMM database extract, resulting in an estimated annual under submission 134,438 kWh per annum.	Still existing
			No database reporting is being provided and therefore changes made in the database are not reflected in submissions.	Still existing

Table of Recommendations

Subject	Section	Recommendation	Status
Deriving submission information	2.1	WDC provide a monthly report from RAMM to Genesis to use for submission.	Repeated
Deriving submission information	2.1	Genesis to investigate with WDC to get a burn hours report from Telensa until it can be used for monthly reporting.	Repeated
Database accuracy	3.1	Genesis to liaise with WDC and Horizon to ensure streetlight livening dates are captured in RAMM in a timely manner.	Repeated

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

Code reference

Clause 16A.26 and 17.295F

Code related audit information

Retailers must ensure that DUML database audits are completed:

1. *by 1 June 2018 (for DUML that existed prior to 1 June 2017)*
2. *within three months of submission to the reconciliation manager (for new DUML)*
3. *within the timeframe specified by the Authority for DUML that has been audited since 1 June 2017.*

Audit observation

Genesis have requested Veritek to undertake this streetlight audit.

Audit commentary

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

Audit outcome

Compliant

2. DUML DATABASE REQUIREMENTS

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

Code reference

Clause 11(1) of Schedule 15.3

Code related audit information

The retailer must ensure the:

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

Audit observation

The process for calculation of consumption was examined.

Audit commentary

Genesis reconciles this DUML load using the UNM profile for one ICP (1000023060BP0E2) and the NST profile for remaining two ICPs (1000023042BPD32 and 1000023047BP07D). As detailed in **section 1.6**:

The previous audit recorded that two ICPs with no items of load were recorded in the RAMM database. These ICPs have now been removed from the database, but as recorded in sections 2.1 and 3.1, submission is still occurring for ICP 1000023042BPD32. ICP 1000023061BPCA7 has now been decommissioned.

The NST profile requires that a data logger be used to calculate the volumes, but the registry figure is being used for submission. Non-compliance for the incorrect profile is recorded for ICPs 1000023047BP07D and 1000023042BPD32. In addition, the NST profile was deemed unsuitable for use during the recent profile audit.

The kWh values are calculated using the registry figures. I recommend that WDC provide a monthly report from RAMM to Genesis to use for submission.

Description	Recommendation	Audited party comment	Remedial action
Deriving submission information	WDC provide a monthly report from RAMM to Genesis to use for submission.	WDC are aware of the recommendation and Genesis will continue to work with WDC regarding RAMM data and investigating the use of Telensa data.	Identified

As noted in previous audits, there are no loggers used for this lighting load. WDC have installed a central management system called Telensa as part of the LED replacement programme of work. This has been demonstrated during a past site audit. The light burn times are controlled by light sensors in each light and the burn hours are recorded in the CMS. This has replaced the networks relays previously used. I recommend that Genesis investigate if Telensa can provide a burn hours report by ICP.

Description	Recommendation	Audited party comment	Remedial action
Deriving submission information	Genesis to investigate with WDC to get a burn hours report from Telensa until it can be used for monthly reporting.	Genesis is investigating if we are able to use Telensa data for billing and submission purposes.	Investigating

The calculation method used by Genesis to calculate submission will not be representative of the actual burn hours. This is recorded as non-compliance.

As reported in the last audit, the Telensa system calculates the kWh consumption across the streetlight network. Genesis has analysed the output of Telensa and concluded it is accurate. They intend to use this output once a check meter is installed, and a profile is set up.

I confirmed WDC are not dimming any of their lights at this stage.

I compared the submission volumes for the three ICPs with the load recorded in the database extract provided for this audit for April 2024 against the volumes submitted by Genesis and found discrepancies for all ICPs.

ICPs	Fittings number from April 2024 submission	Fittings number from April 2024 database extract	Differences	kWh value submitted	Calculated kWh value from database	Differences
1000023042BPD32	11	0	-11		0	
1000023060BP0E2	199	193	-6	4,094.7	3,777.55	317.15
1000023047BP07D	2,250	2,346	+96	32,730	46,623.06	-13,893.06
Total month kWh difference						-13,575.91

Annualised this will result in an estimated annual under submission of approximately 114,261 kWh. This is calculated on the difference in the daily kWh figures.

The field audit confirmed that the RAMM database if used for submission would be within the database accuracy thresholds. This is detailed in **section 3.1**.

The registry is being used to calculate submissions as monthly reporting is not being provided to Genesis, so any changes made in the database are not being reflected in submissions. This is recorded as non-compliance.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.1 With: Clause 11(1) of Schedule 15.3 From: 08-Oct-21 To: 14-Jun-24	11 items of load submitted on both ICP 1000023042BPD32 and 1000023060BP0E2 resulting in an estimated over submission of 7,850 kWh since February 2020 to date. Incorrect NST profile applied to ICPs 1000023047BP07D and 1000023042BPD32. NST profile is no longer suitable for use as recorded in the 2023 profile audit. Actual on/off times are different to the fixed 11.9 hours used by Genesis. Variance found between the kWh figure submitted by Genesis and the RAMM database extract, resulting in an estimated annual under submission 114,261 kWh per annum. No database reporting is being provided and therefore changes made in the database are not reflected in submissions. Potential impact: High Actual impact: High Audit history: Multiple times previously Controls: Weak Breach risk rating: 9

Audit risk rating	Rationale for audit risk rating
High	The controls are rated as weak as the submission is not calculated from the database and the burn hours used to calculate submission are fixed but are variable in the field. The impact is assessed to be high due to the submission variances.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis continues to work on its application for a new profile and have these applied in the registry. Genesis & WDC are aware of the findings and will continue to work together in gaining RAMM data and the use of Telensa data for billing & submission purposes	Continuous Improvement	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis has had its profile shape application submitted and is working on applying these in the registry.	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 have an ICP recorded against them.

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 the nearest street address, pole numbers, metres from the end of the carriageway and GPS coordinates 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 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 and that all items of load were recorded.

Audit commentary

All items of load have a lamp make, model, wattage and ballast wattage recorded in the database. The accuracy of these 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 314 items of load on 18 July 2023.

Audit commentary

The field audit findings are shown in the table below.

Finding	Quantity
Additional lights found in the field	0
Light in the field not in the database	0
Incorrect wattage	7

No additional lights were identified.

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

Audit outcome

Compliant

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

Code reference

Clause 11(3) of Schedule 15.3

Code related audit information

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

Audit observation

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

Audit commentary

The database tracks additions and removals as required by this clause.

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 contains a complete audit trail of all additions and changes with operator ID to the database information.

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

RAMM extracts have been provided periodically and these have been used to populate the registry unmetered load figures. The registry unmetered load figures are used to calculate submission. A RAMM database extract was provided in June 2023, and I assessed the accuracy of this by using the DUML Statistical Sampling Guideline. The table below shows the survey plan.

Plan Item	Comments
Area of interest	Whakatane District Council area
Strata	The database contains the items of load in the Whakatane region. The processes for the management of all WDC items of load are the same, but I decided to place the items of load into three strata: 1. Roads A-K, 2. Roads L-Z, and 3. Rural.
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 42 sub-units.
Total items of load	226 items of load were checked.

Wattages for all items of load were checked against the published standardised wattage tables produced by the Electricity Authority, and the manufacturer's specifications or in the case of LED lights against the LED light specification.

Audit commentary

Database accuracy based on the field audit.

A field audit was conducted of a statistical sample of 226 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	99.6	Wattage from survey is 0.4% lower than the database.
R_L	99	With a 95% level of confidence, it can be concluded that the error is between -0.1% or up to -1.0%
R_H	99.9	

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 database is within the allowable +/-5% variance threshold.

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

There is a 95% level of confidence that the installed capacity is the same as the database and up to 1.0 kW lower than the database.

In absolute terms, total annual consumption is estimated to be 2,200 kWh lower than the DUML database indicates.

There is a 95% level of confidence that the annual consumption is between 300 kWh p.a. lower to 5,400 kWh p.a. lower than the database indicates.

All discrepancies were resolved immediately.

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

I reviewed the database and found all had the correct wattage and ballast applied except for 10 items of load with "LED" recorded as the light type. This description is not sufficient to determine the correct wattage has been applied. These are all in the same street and the actual wattage is unknown. WDC intend to upgrade these. This is recorded as non-compliance.

Waka Kotahi lighting

Waka Kotahi lighting is not included in the database. Waka Kotahi lighting is expected to be reconciled from their own database.

ICP accuracy

The RAMM database is used to manage roading assets and all items of load have the correct ICP recorded against them. There is one ICP discussed in **section 1.6**, that has no load associated with it. This is recorded as non-compliance in **sections 2.1** and **3.2**.

Location accuracy

Analysis of the RAMM database extract found compliance for all items of load.

Festive Lighting

Festive lighting is connected into the metered circuits and is therefore accounted for in the metered supply.

Private Lighting

Some private lights have been identified as a result of the installation of the Telensa system as these lights were no longer turning off with the removal of the network owned relays. These were passed to Horizon networks for investigation.

Change management process findings.

Horizon is the contractor and paperwork is updated directly into RAMM by Horizon. Pocket RAMM is used by the contractors to track changes. These are reviewed by WDC before they are accepted into the database. This is done on at least a monthly basis so once a monthly wattage report is received such changes will be submitted correctly.

WDC have a central management system called Telensa. This has been demonstrated during a past site audit and controls the lights burn times. It has replaced the networks relays previously used. WDC have no plans to use dimming. The future use of the CMS system is discussed further in **sections 2.1** and **3.2**.

The Telensa CMS system tracks faults on the network and therefore outage patrols are no longer required. The system also flags if the lamp burn wattage is different to that recorded in the database. This will increase the accuracy of the data in the database. The data from the Telensa system is synchronised with the RAMM database.

The new connection process was examined and is unchanged from the previous audit. The level of new activity in the WDC area is increasing but is still relatively small. New streetlight circuits get connected by the network, but these do not get added to the RAMM database until the lights are vested to WDC. Currently the registry figures are used for submission, and this does not track changes made in the database. Once a monthly wattage report is provided such changes will be able to be accounted for in submission calculations. However, the current new connection process can result in lights being connected for some time before they get added to the database. I recommend that Genesis work with WDC and Horizon to ensure that streetlight livening dates are recorded in RAMM. The network streetlight connection processes are examined in the Horizon Distributor audit report.

Description	Recommendation	Audited party comment	Remedial action
Database accuracy	Genesis to liaise with WDC and Horizon to ensure streetlight livening dates are captured in RAMM in a timely manner.	WDC are aware of the findings and Genesis will investigate this with Horizon & WDC to ensure livening dates are being captured in a timely manner to ensure accuracy	Investigating

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.1 With: Clause 15.2 and 15.37B(b) From: 01-Jul-23 To: 14-Jun-24	10 items of load with insufficient light description of "LED" and actual wattages are unknown. New connections are recorded from the time of vesting, not from the time of livening. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as moderate because they mitigate risk most of the time but there is room for improvement. The audit risk rating is assessed to be low due to the error in kWh.

Actions taken to resolve the issue	Completion date	Remedial action status
WDC are aware of the findings and Genesis will investigate this with Horizon & WDC to ensure livening dates are being captured in a timely manner to ensure accuracy	Continuous Improvement	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
WDC are aware of the findings and Genesis will investigate this with Horizon & WDC to ensure livening dates are being captured in a timely manner to ensure 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 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

Genesis reconciles this DUML load using the UNM profile for one ICP (1000023060BP0E2) and the NST profile for remaining two ICPs (1000023042BPD32 and 1000023047BP07D). As detailed in **section 1.6**:

The previous audit recorded that two ICPs with no items of load were recorded in the RAMM database. These ICPs have now been removed from the database, but as recorded in sections 2.1 and 3.1, submission is still occurring for ICP 1000023042BPD32. ICP 1000023061BPCA7 has now been decommissioned.

The NST profile requires that a data logger be used to calculate the volumes, but the registry figure is being used for submission. Non-compliance for the incorrect profile is recorded for ICPs 1000023047BP07D and 1000023042BPD32. In addition, the NST profile was deemed unsuitable for use during the recent profile audit.

The kWh values are calculated using the registry figures. I recommend that WDC provide a monthly report from RAMM to Genesis to use for submission. A recommendation is made in Section 2.1, that WDC provide a monthly report from RAMM to Genesis to use for submission.

As noted in previous audits, there are no loggers used for this lighting load. WDC have installed a central management system called Telensa as part of the LED replacement programme of work. This has been demonstrated during a past site audit. The light burn times are controlled by light sensors in each light and the burn hours are recorded in the CMS. This has replaced the networks relays previously used. I recommend in Section 2.1, that Genesis investigate if Telensa can provide a burn hours report by ICP.

The calculation method used by Genesis to calculate submission will not be representative of the actual burn hours. This is recorded as non-compliance.

As reported in the last audit, the Telensa system calculates the kWh consumption across the streetlight network. Genesis has analysed the output of Telensa and concluded it is accurate. They intend to use this output once a check meter is installed, and a profile is set up.

I confirmed WDC are not dimming any of their lights at this stage.

I compared the submission volumes for the three ICPs with the load recorded in the database extract provided for this audit for April 2024 against the volumes submitted by Genesis and found discrepancies for all ICPs.

ICPs	Fittings number from April 2024 submission	Fittings number from April 2024 database extract	Differences	kWh value submitted	Calculated kWh value from database	Differences
1000023042BPD32	11	0	-11		0	
1000023060BP0E2	199	193	-6	4,094.7	3,777.55	317.15
1000023047BP07D	2,250	2,346	+96	32,730	46,623.06	-13,893.06
Total month kWh difference						-13,575.91

Annualised this will result in an estimated annual under submission of approximately 114,261 kWh. This is calculated on the difference in the daily kWh figures.

The field audit confirmed that the RAMM database if used for submission would be within the database accuracy thresholds. This is detailed in **section 3.1**.

The registry is being used to calculate submissions as monthly reporting is not being provided to Genesis, so any changes made in the database are not being reflected in submissions. This is recorded as non-compliance.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.2 With: Clause 15.2 and 15.37B(c) From: 08-Oct-21 To: 14-Jun-24	11 items of load submitted on both ICP 1000023042BPD32 and 1000023060BP0E2 resulting in an estimated over submission of 7,850 kWh since February 2020 to date. Incorrect NST profile applied to ICPs 1000023047BP07D and 1000023042BPD32. NST profile is no longer suitable for use as recorded in the 2023 profile audit. Actual on/off times are different to the fixed 11.9 hours used by Genesis. Variance found between the kWh figure submitted by Genesis and the RAMM database extract, resulting in an estimated annual under submission 114,261 kWh per annum. No database reporting is being provided and therefore changes made in the database are not reflected in submissions. Potential impact: High Actual impact: High Audit history: Multiple times previously Controls: Weak Breach risk rating: 9
Audit risk rating	**Rationale for audit risk rating**

High	The controls are rated as weak as the submission is not calculated from the database and the burn hours used to calculate submission are fixed but are variable in the field. The impact is assessed to be high due to the submission variances.

Actions taken to resolve the issue	**Completion date**	**Remedial action status**
Genesis continues to work on its application for a new profile and have these applied in the registry. Genesis & WDC are aware of the findings and will continue to work together in gaining RAMM data and the use of Telensa data for billing & submission purposes	Continuous Improvement	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis has had its profile shape application submitted and is working on applying these in the registry.	Continuous Improvement	

CONCLUSION

Genesis reconciles this DUML load using the UNM profile for one ICP (1000023060BP0E2) and the NST profile for remaining two ICPs (1000023042BPD32 and 1000023047BP07D).

The previous audit recorded that two ICPs with no items of load were recorded in the RAMM database. These ICPs have now been removed from the database, but submission is still occurring for ICP 1000023042BPD32. ICP 1000023061BPCA7 has now been decommissioned.

The NST profile requires that a data logger be used to calculate the volumes, but the registry figure is being used for submission. Non-compliance for the incorrect profile is recorded for ICPs 1000023047BP07D and 1000023042BPD32. In addition, the NST profile was deemed unsuitable for use during the recent profile audit.

Genesis continues to use the registry figures and UML or NST profile to calculate submissions. I compared the database extract against the registry figures and found a variance resulting in an estimated annual under submission 114,261 kWh. I recommend that WDC provide a monthly report from RAMM to Genesis to use for submission. In the long-term Genesis intends to start using the output from WDC's Telensa system for on/off times and possibly for wattage information. The wattage information will need to be checked for accuracy first, because lamps of the same rated wattage do not all have the same reported wattage in Telensa.

This audit found three non-compliances and makes three recommendations. The future risk rating of 20 indicates that the next audit be completed in three months. I have considered this in conjunction with Genesis' comments and recommend that the next audit be conducted in nine months.

PARTICIPANT RESPONSE

Genesis agrees with the audit findings.

Genesis has had its profile shape application submitted and we ar working on applying these in the registry to meet compliance.

Genesis will work with WDC to investigate the use of Telensa data and installing a check meter. This will allow accurate billing & submission data.

In the interim, Genesis will work with WDC in gaining RAMM data to ensure accurate billing & submissions while Telensa is being investigated.