

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

For

**WHAKATANE DISTRICT COUNCIL
AND GENESIS ENERGY
NZBN: 9429037706609**

Prepared by: Rebecca Elliot

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Audit report due date: 17 October 2022

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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 continues to use the registry figures and UML or NST profile to calculate submissions. There is a variance between the RAMM database extract, and the kWh figure submitted by Genesis resulting in an estimated annual under submission 32,291 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.

As was discussed in the September 2020 streetlight audit report, ICPs 1000023042BPD32 and 1000023061BPCA7 do not have any unmetered load associated with them and should have been decommissioned. This will have resulted in a combined over submission to the market of 11,064 kWh since September 2020.

This audit found four non-compliances and makes one recommendation. The future risk rating of 21 indicates that the next audit be completed in three months. I have considered this in conjunction with Genesis' comments, the late return of the draft report and recommend the next audit be in 11 months making this due in September 2023.

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	<p>Actual on/off times are different to the fixed 11.9 hours used by Genesis.</p> <p>Two ICPs with no unmetered load associated not decommissioned resulting in over submission of 11,064 kWh occurring since September 2020 to date.</p> <p>Variance found between the kWh figure submitted by Genesis and the RAMM database extract, resulting in an estimated annual under submission 141,474 kWh per annum.</p> <p>No database reporting is being provided and therefore changes made in the database are not reflected in submissions.</p>	Weak	High	9	Investigating
Location of each item of load	2.3	11(2)(b) of Schedule 15.3	One item of load not readily locatable.	Strong	Low	1	Identified
Database accuracy	3.1	15.2 and 15.37B(b)	<p>One item of load is not readily locatable.</p> <p>New connections are recorded from the time of vesting, not from the time of livening.</p>	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)	<p>Actual on/off times are different to the fixed 11.9 hours used by Genesis.</p> <p>Two ICPs with no unmetered load associated not decommissioned resulting in over submission of 11,064 kWh occurring since September 2020 to date.</p> <p>Variance found between the kWh figure submitted by Genesis and the RAMM database extract, resulting in an estimated annual under submission 141,474 kWh per annum.</p> <p>No database reporting is being provided and therefore changes made in the database are not reflected in submissions.</p>	Weak	High	9	Investigating
Future Risk Rating						21	

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
All load recorded in database	2.5	Check if additional light at the end of Kotare Drive.

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

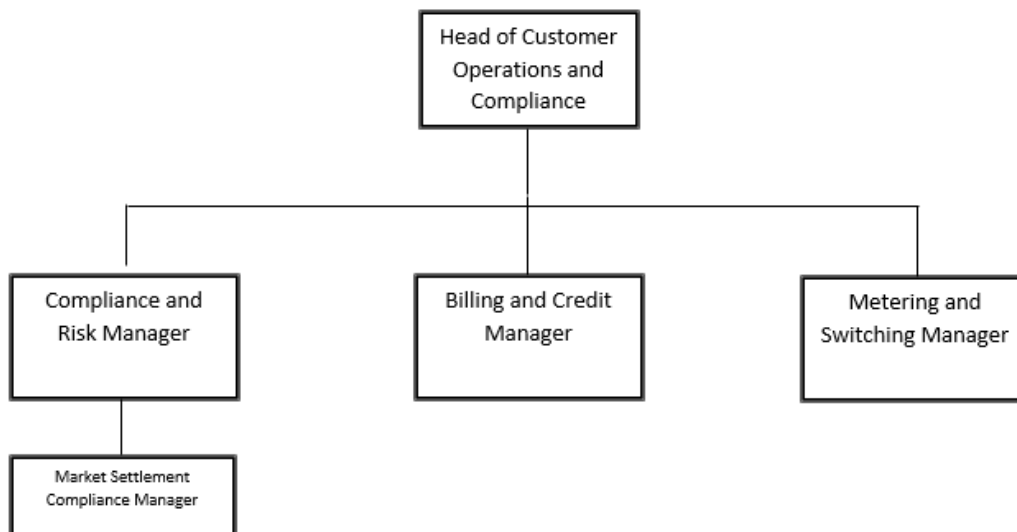
The Electricity Authority's website was reviewed to identify any exemptions relevant to the scope of this audit.

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
Nirav Teli	DUML Data & Stakeholder Lead	Genesis Energy
Aidan Glynn	Team Leader - Network Operations	Whakatane DC
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
1000023061BPCA7	Murupara Streetlights	EDG0331	UNM	0	0
1000023060BP0E2	Ruatahuna Streetlights	EDG0331	UNM	199	11,513
1000023047BP07D	Whakatane Streetlights	EDG0331	NST	2,340	123,596
Total				2,539	135,109

The two ICPs with no items of load recorded in the RAMM database were discussed in the September 2020 WDC audit report:

- ICP 1000023061BPCA7:

The assets associated with ICP 1000023061BPCA7 (Murupara amenity lights) are not recorded in the RAMM database and are excluded from this audit, as Whakatane DC have completed a number of checks and can find no evidence of these lights. Therefore, Genesis and the Whakatane District Council have agreed they do not exist.

This ICP should have been decommissioned. The resulting over submission to the market due to this is detailed in **sections 2.1** and **3.2**.

- ICP 1000023042BPD32:

The RAMM database is used to manage roading assets. Amenity lights were previously recorded in the database against ICP 1000023042BPD32, but they are now recorded against ICP 1000023047BP07D.

This ICP should also have been decommissioned. The resulting over submission to the market due to this is detailed in **sections 2.1** and **3.2**.

1.7. Authorisation Received

All information was provided directly by Genesis and WDC.

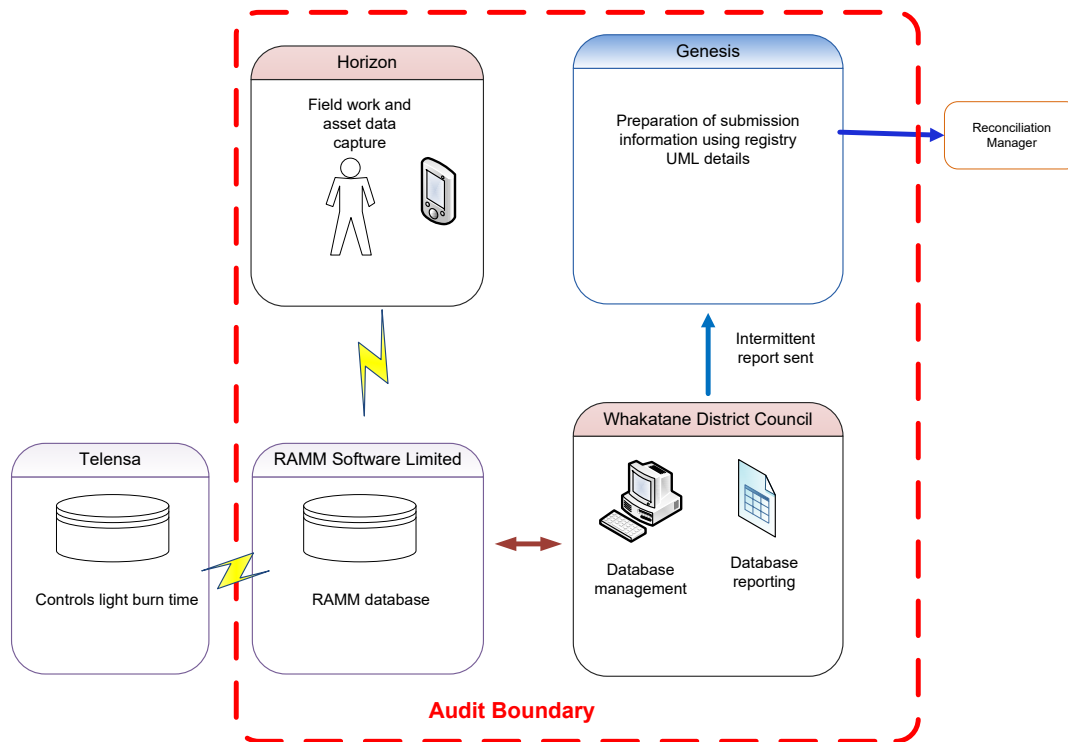
1.8. Scope of Audit

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

A field audit against the RAMM database extract was undertaken to assess the accuracy of this against the registry figures used for submission. Horizon is engaged by WDC and conducts the fieldwork and asset data capture. WDC have installed a central management system called Telensa. It controls the light burn times and has replaced the network relays previously used. 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 305 items of load on September 15th, 2022.

1.9. Summary of previous audit

The previous audit was completed in October 2022 by Steve Woods of Veritek Limited. The last audit found four non-compliances and made no recommendations. 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	Variance found between RAMM database extract and the kWh figure submitted by Genesis resulting in an estimated annual under submission 32,291 kWh per annum. Actual on/off times are different to the fixed 11.9 hours used by Genesis. Submission is based on a snapshot and does not consider historic adjustments.	Still existing
All load recorded in database	2.5	11(2A) of Schedule 15.3	Two additional lights found in the field.	To be investigated

Subject	Section	Clause	Non-compliance	Status
Database accuracy	3.1	15.2 and 15.37B(b)	<p>Any changes that are made during any given month take effect from the beginning of that month. This process does not account for historic changes or changes within a month. New connections are recorded from the time of vesting, not from the time of livening.</p> <p>Two incorrect wattages found by the field audit.</p> <p>Two additional lights found by the field audit.</p>	Still existing
Volume information accuracy	3.2	15.2 and 15.37B(c)	<p>Variance found between RAMM database extract and the kWh figure submitted by Genesis resulting in an estimated annual under submission 32,291 kWh per annum.</p> <p>Actual on/off times are different to the fixed 11.9 hours used by Genesis.</p> <p>Submission is based on a snapshot and does not consider historic adjustments.</p>	Still existing

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 DUMML database audits are completed:

1. by 1 June 2018 (for DUMML that existed prior to 1 June 2017)
2. within three months of submission to the reconciliation manager (for new DUMML)
3. within the timeframe specified by the Authority for DUMML 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. 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.

Audit commentary

Genesis reconciles this DUMML load using the UNM profile for two ICPs (1000023060BP0E2 and 1000023061BPCA7) and the NST profile for remaining two ICPs (1000023042BPD32 and 1000023047BP07D). The kWh value is calculated using the registry figure which has not been updated since 2019. As noted in previous audits, there is no logger 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 therefore 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. This is still being progressed. I recommend that in the interim a RAMM data extract is sent to Genesis to derive the kW value which will be more accurate than using the registry figures which have not been updated since 2019.

As detailed in **section 1.6**, ICPs 1000023042BPD32 and 1000023061BPCA7 do not have any unmetered load associated with them and should have been decommissioned. This will have resulted in a combined over submission to the market of 11,064 kWh since September 2020.

I compared the submission volumes for the two remaining ICPs with the load recorded in the database extract provided for this audit for September 2022 against the volumes submitted by Genesis and found discrepancies for both ICPs.

ICPs	Fittings number from September 2022 submission	Fittings number from September 2022 database extract	Differences	kWh value submitted	Calculated kWh value from database	Differences
1000023060BP0E2	199	199	0	4,231.19	4,247.15	-31.97
1000023047BP07D	2,250	2,340	+90	33,821.00	45,594.56	-11,773.56
Total month kWh difference						-11,789.52

Annualised this will result in an estimated annual under submission of approximately 141,474 kWh. This is calculated on the difference in the daily kWh figures. Genesis is investigating this discrepancy.

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		
<p>Audit Ref: 2.1</p> <p>With: Clause 11(1) of Schedule 15.3</p> <p>From: 08-Oct-21</p> <p>To: 30-Sep-22</p>	<p>Actual on/off times are different to the fixed 11.9 hours used by Genesis.</p> <p>Two ICPs with no unmetered load associated not decommissioned resulting in over submission of 11,064 kWh occurring since September 2020 to date.</p> <p>Variance found between the kWh figure submitted by Genesis and the RAMM database extract, resulting in an estimated annual under submission 141,474 kWh per annum.</p> <p>No database reporting is being provided and therefore changes made in the database are not reflected in submissions.</p> <p>Potential impact: High</p> <p>Actual impact: High</p> <p>Audit history: Multiple times previously</p> <p>Controls: Weak</p> <p>Breach risk rating: 9</p>		
Audit risk rating	Rationale for audit risk rating		
<p>High</p>	<p>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.</p> <p>The impact is assessed to be high due to the submission variances.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>Genesis will re-engage with the council in installing a Golden meter to use CMS data however until the golden meter has been installed and supporting data has been obtained to validate on/off times and asset kWh within CMS, Genesis will continue to work with the council to obtain monthly data output.</p> <p>Genesis has requested the WDC to confirm a date from which there were no assets connected to ICP's 1000023042BPD32 and 1000023061BPCA7. Once we receive a confirmation of the date and an approval for the decommission, we will proceed to have the ICP's decommissioned.</p> <p>Genesis is currently using registry information for submission and have requested WDC to provide database monthly so +/- in submission can be looked at and monthly changes made can reflect in submission.</p>		<p>Continuous improvement</p>	<p>Investigating</p>
Preventative actions taken to ensure no further issues will occur		Completion date	
<p>Genesis will work with the council to increase accuracy levels in their database.</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 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 but one item of load. Pole number 6618, Ruatoki Valley Road has no location details. This has been passed to WDC to correct and is recorded as non-compliance.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 2.3 With: Clause 11(2)(b) of Schedule 15.3 From: 08-Oct-21 To: 30-Sep-22	One item of load not readily locatable. Potential impact: Low Actual impact: None Audit history: None Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
Low	The controls are rated as strong as the processes in place will mitigate risk to an acceptable level. The impact is assessed to be none but low is the only option available to assign.		
Actions taken to resolve the issue		Completion date	Remedial action status
Whakatane DC has been advised of the discrepancy and relies on them to accurately maintain the database.		Continuous improvement	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Genesis will work with the council to increase accuracy levels in their database.		Continuous improvement	

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 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.

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 305 items of load.

Audit commentary

The field audit findings are shown in the table below.

Finding	Quantity	Comments
Light in the field not in the database	1	This has been provided to WDC to investigate
Incorrect wattage	5	These have been provided to WDC to resolve

I found one additional lamp in the field. This is in Kotare Drive (GPS co-ordinates: -37.949812, 176.948954), which is part of a new subdivision, but it was unclear if this light has been vested to WDC at the time of audit as the development has not been completed, therefore I have not recorded non-compliance but recommend that this is investigated.

Recommendation	Description	Audited party comment	Remedial action
All load recorded in database	Check if additional light at the end of Kotare Drive.	Whakatane DC has been advised of the discrepancy and relies on them to accurately maintain the database.	Investigating

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

A RAMM database extract provided in November 2020 has 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 September 2022, 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: <ol style="list-style-type: none"> 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 45 sub-units.
Total items of load	305 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 348 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	101.0	Wattage from survey is 1.9% higher than the database to one decimal place
R _L	99.4	With a 95% level of confidence, it can be concluded that the error is between -0.6% or up to +4.0%
R _H	104.0	

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 the allowable +/-5% variance threshold.

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 the between the 1.0 kW lower to 5.0 kW higher than the database.

In absolute terms, total annual consumption is estimated to be 6,000 kWh higher than the DUML database indicates.

There is a 95% level of confidence that the annual consumption is between 3,400 kWh p.a. lower to 38,900 kWh p.a. higher 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>

Lamp description and capacity accuracy

All lamp descriptions and wattages were correctly recorded.

NZTA lighting

NZTA lighting is not included in the database. NZTA lighting has separate ICPs.

ICP accuracy

The RAMM database is used to manage roading assets and all items of load have the correct ICP recorded against them. There are two ICPs relating to amenity lighting discussed in **section 1.6**, that have no load associated with them. 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 but one item and this is recorded as non-compliance below and in **section 2.3**.

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 now the contractor and paperwork is updated directly into RAMM by Horizon. Pocket RAMM started being used by the contractors in August 2022 to track changes in the future. These are reviewed by WDC before they are accepted into the database.

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 and controls the lights burn times. It has replaced the networks relays previously used. WDC have no plans to use dimming. The impact of the CMS system on the calculation of submission 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. This can be some months later and therefore the intervening period is not being reconciled. Any changes that are made during any given month take effect from the beginning of that month. This process does not account for historic changes or changes within a month.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 3.1 With: Clause 15.2 and 15.37B(b) From: 08-Oct-21 To: 30-Sep-22	One item of load is not readily locatable. 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
Genesis has requested WDC to provide a database so we can review it and report exceptions like location ballast etc. Genesis has reviewed the auditors finding and have advised WDC of the discrepancy with the intent that WDC makes every effort to ensure the exceptions are rectified.		Continuous Improvement	Investigating
Preventative actions taken to ensure no further issues will occur		Completion date	
Genesis will 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 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 two ICPs (1000023060BP0E2 and 1000023061BPCA7) and the NST profile for remaining two ICPs (1000023042BPD32 and 1000023047BP07D). The kWh value is calculated using the registry figure which has not been updated since 2019. As noted in previous audits, there is no logger 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 therefore 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. This is still being progressed. I recommend that in the interim a RAMM data extract is sent to Genesis to derive the kW value which will be more accurate than using the registry figures which have not been updated since 2019.

As detailed in **section 1.6**, ICPs 1000023042BPD32 and 1000023061BPCA7 do not have any unmetered load associated with them and should have been decommissioned. This will have resulted in a combined over submission to the market of 11,064 kWh since September 2020.

I compared the submission volumes for the two remaining ICPs with the load recorded in the database extract provided for this audit for September 2022 against the volumes submitted by Genesis and found discrepancies for both ICPs.

ICPs	Fittings number from September 2022 submission	Fittings number from September 2022 database extract	Differences	kWh value submitted	Calculated kWh value from database	Differences
1000023060BP0E2	199	199	0	4,231.19	4,247.15	-31.97
1000023047BP07D	2,250	2,340	+90	33,821.00	45,594.56	-11,773.56
Total month kWh difference						-11,789.52

Annualised this will result in an estimated annual under submission of approximately 141,474 kWh. This is calculated on the difference in the daily kWh figures. Genesis is investigating this discrepancy.

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		
<p>Audit Ref: 3.2</p> <p>With: Clause 15.2 and 15.37B(c)</p> <p>From: 08-Oct-21</p> <p>To: 30-Sep-22</p>	<p>Actual on/off times are different to the fixed 11.9 hours used by Genesis.</p> <p>Two ICPs with no unmetered load associated not decommissioned resulting in over submission of 11,064 kWh occurring since September 2020 to date.</p> <p>Variance found between the kWh figure submitted by Genesis and the RAMM database extract, resulting in an estimated annual under submission 141,474 kWh per annum.</p> <p>No database reporting is being provided and therefore changes made in the database are not reflected in submissions.</p> <p>Potential impact: High</p> <p>Actual impact: High</p> <p>Audit history: Multiple times previously</p> <p>Controls: Weak</p> <p>Breach risk rating: 9</p>		
Audit risk rating	Rationale for audit risk rating		
<p>High</p>	<p>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.</p> <p>The impact is assessed to be high due to the submission variances.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>Genesis will re-engage with the council in installing a Golden meter to use CMS data however until the golden meter has been installed and supporting data has been obtained to validate on/off times and asset kWh within CMS, Genesis will continue to work with the council to obtain monthly data output.</p> <p>Genesis has requested the WDC to confirm a date from which there were no assets connected to ICP's 1000023042BPD32 and 1000023061BPCA7. Once we receive a confirmation of the date and an approval for the decommission, we will proceed to have the ICP's decommissioned.</p> <p>Genesis is currently using registry information for submission and have requested WDC to provide database monthly so +/- in submission can be looked at and monthly changes made can reflect in submission.</p>		<p>Continuous improvement</p>	<p>Investigating</p>
Preventative actions taken to ensure no further issues will occur		Completion date	
<p>Genesis will work with the council to increase accuracy levels in their database.</p>		<p>Continuous improvement</p>	

CONCLUSION

Genesis continues to use the registry figures and UML or NST profile to calculate submissions. There is a variance between the RAMM database extract, and the kWh figure submitted by Genesis resulting in an estimated annual under submission 32,291 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.

As was discussed in the September 2020 streetlight audit report, ICPs 1000023042BPD32 and 1000023061BPCA7 do not have any unmetered load associated with them and should have been decommissioned. This will have resulted in a combined over submission to the market of 11,064 kWh since September 2020.

This audit found four non-compliances.

The future risk rating of 21 indicates that the next audit be completed in three months. I have considered this in conjunction with Genesis' comments, the late return of the draft report and recommend the next audit be in 11 months making this due in September 2023.

PARTICIPANT RESPONSE

Genesis will continue to work with the council to obtain database on a monthly basis and will work with them to increase database accuracy.