

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

For

**WHAKATANE DISTRICT COUNCIL
AND GENESIS ENERGY**

Prepared by: Steve Woods

Date audit commenced: 5 October 2021

Date audit report completed: 10 October 2021

Audit report due date: 17 October 2021

TABLE OF CONTENTS

Executive summary	3
Audit summary	4
Non-compliances	4
Recommendations	5
Issues 5	
1. Administrative	6
1.1. Exemptions from Obligations to Comply with Code	6
1.2. Structure of Organisation	6
1.3. Persons involved in this audit.....	7
1.4. Hardware and Software	7
1.5. Breaches or Breach Allegations.....	7
1.6. ICP Data	7
1.7. Authorisation Received	7
1.8. Scope of Audit	8
1.9. Summary of previous audit	9
Table of Non-Compliance.....	9
1.10. Distributed unmetered load audits (Clause 16A.26 and 17.295F).....	9
2. DUML database requirements.....	11
2.1. Deriving submission information (Clause 11(1) of Schedule 15.3)	11
2.2. ICP identifier and items of load (Clause 11(2)(a) and (aa) of Schedule 15.3)	12
2.3. Location of each item of load (Clause 11(2)(b) of Schedule 15.3)	13
2.4. Description and capacity of load (Clause 11(2)(c) and (d) of Schedule 15.3)	13
2.5. All load recorded in database (Clause 11(2A) of Schedule 15.3)	14
2.6. Tracking of load changes (Clause 11(3) of Schedule 15.3).....	15
2.7. Audit trail (Clause 11(4) of Schedule 15.3).....	15
3. Accuracy of DUML database	17
3.1. Database accuracy (Clause 15.2 and 15.37B(b))	17
3.2. Volume information accuracy (Clause 15.2 and 15.37B(c))	21
Conclusion	23
Participant response	23

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. 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.

Amenity lights were previously recorded in the database against ICP 1000023042BPD32, but they are now recorded against ICP 1000023047BP07D, however Genesis is still submitting for ICP 1000023042BPD32.

This audit found four non-compliances.

The future risk rating of 15 indicates that the next audit be completed in 12 months. I agree with this recommendation; it should allow sufficient time to arrange for a check meter to be installed and to establish back-office processes to enable submission using a different profile.

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>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>	Weak	Medium	6	Identified
All load recorded in database	2.5	11(2A) of Schedule 15.3	Two additional lights found in the field.	Strong	Low	1	Identified
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>	Moderate	Low	2	Identified

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)	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.	Weak	Medium	6	Identified
Future Risk Rating						15	

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

RECOMMENDATIONS

Subject	Section	Recommendation

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

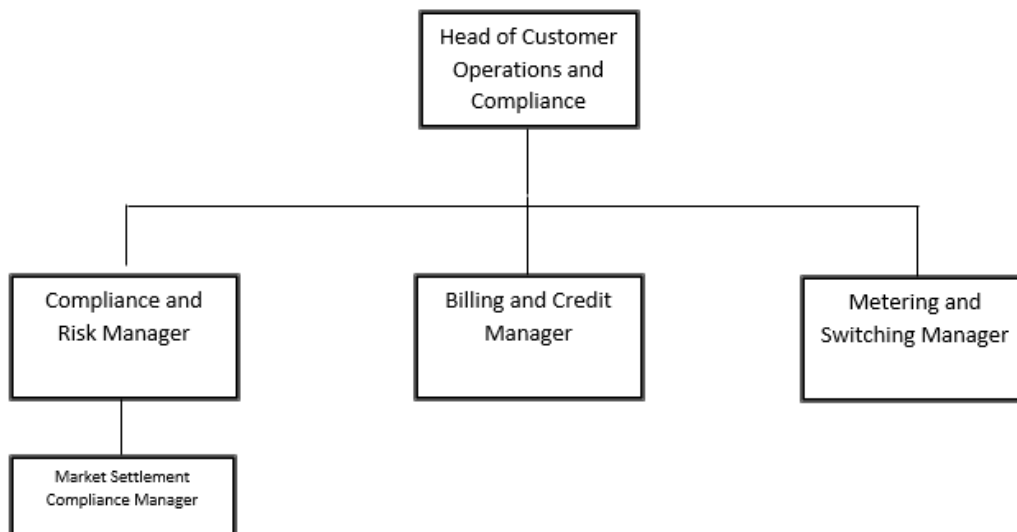
The Electricity Authority's website was reviewed to identify any exemptions relevant to the scope of this audit.

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:

Steve Woods

Veritek Limited

Electricity Authority Approved Auditor

Other personnel assisting in this audit were:

Name	Title	Company
Craig Young	Rubiks Business Service Owner – Market Settlements and interactions	Genesis Energy
Julia Jones	Technical Specialist – Market Settlement Compliance	Genesis Energy
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.

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	199	11,558
1000023047BP07D	Whakatane Streetlights	EDG0331	NST	2,337	123,314
Total				2,536	134,872

1.7. Authorisation Received

All information was provided directly by Genesis and WDC.

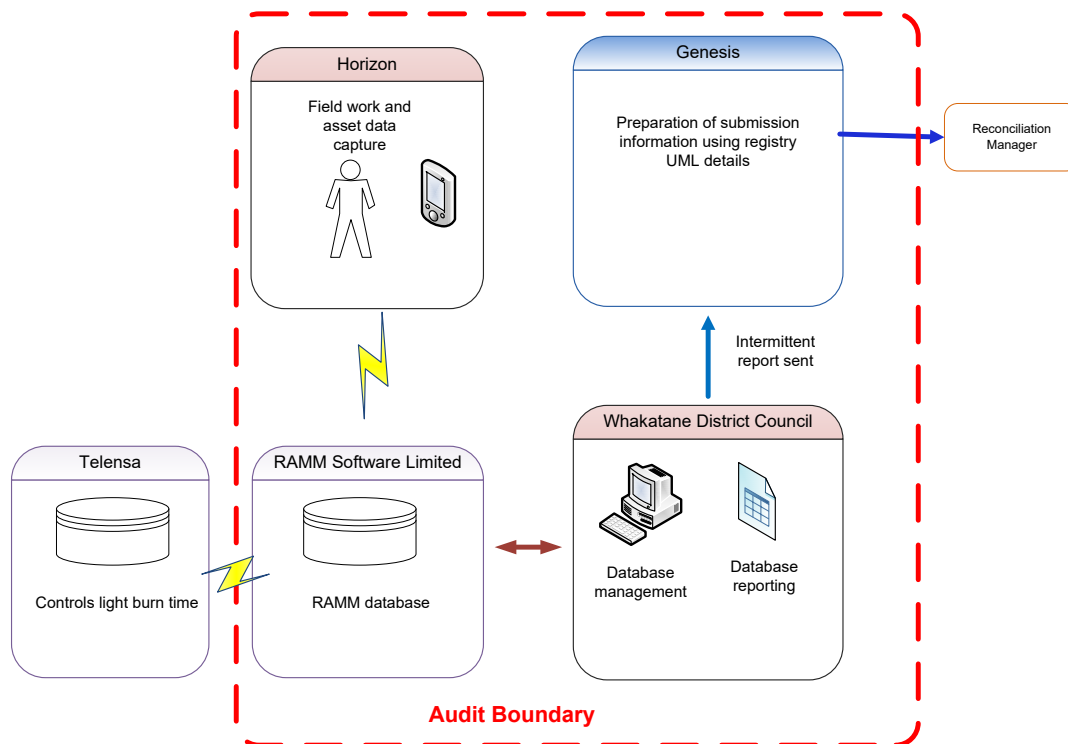
1.8. Scope of Audit

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.

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 as part of the LED replacement programme of work. 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 348 items of load.

1.9. Summary of previous audit

The previous audit was completed in April 2021 by Steve Woods of Veritek Limited. 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 over submission 58,765 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
Database accuracy	3.1	15.2 and 15.37B(b)	2 incorrect ballasts. 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.	Still existing
Volume information accuracy	3.2	15.2 and 15.37B(c)	Variance found between RAMM database extract and the kWh figure submitted by Genesis resulting in an estimated annual over submission 58,765 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
Subject	Section	Recommendation		Status
Deriving submission information	2.1	Liaise with WDC to determine the accuracy of the on/off information and the kWh reporting		Cleared

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

Code reference

Clause 16A.26 and 17.295F

Code related audit information

Retailers must ensure that DUML database audits are completed:

- by 1 June 2018 (for DUML that existed prior to 1 June 2017)*
- 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 and NST profiles and the registry daily kWh figure.

I compared the submission volumes with the load recorded in the database extract provided for this audit for August 2021 against the volumes submitted by Genesis and found the following discrepancies.

ICPs	Fittings number from August 2021 submission	Fittings number from August 2021 database extract	Differences	kWh value submitted	Calculated kWh value from database	Differences
1000023042BPD32	11	0	+11	190.72	0	+190.72
1000023060BP0E2	199	199	0	4,231.78	4,263.75	-31.97
1000023047BP07D	2,250	2,337	+87	42,640.87	45,490.53	-2,849.66
Total month kWh difference						-2,690.91

Annualised this will result in an estimated annual under submission of approx. 32,291 kWh. This is calculated on the difference in the daily kWh figures.

The results of the field audit found that in absolute terms, total annual consumption is estimated to be 100 kWh lower than the DUML database indicates, confirming that the database has a high level of accuracy.

WDC have installed a central management system called Telensa as part of the LED replacement programme of work. This was demonstrated during the site audit. It controls the light burn times and has replaced the networks relays previously used therefore the fixed burn hours used by Genesis to calculate submission will not be representative of the actual burn hours. This is recorded as non-compliance.

Submission is based on a snapshot of the database at the end of the month and does not consider historic adjustments or the fact that lights can be livened before they are entered into the database.

The Telensa system calculates the kWh consumption across the streetlight network. Genesis has analysed the output of Telensa and concluded it is accurate. Genesis intends to use this output once a check meter is installed, and a profile is set up.

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: 01-Apr-21</p> <p>To: 07-Oct-21</p>	<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> <p>Potential impact: High</p> <p>Actual impact: Medium</p> <p>Audit history: Multiple times previously</p> <p>Controls: Weak</p> <p>Breach risk rating: 6</p>		
Audit risk rating	Rationale for audit risk rating		
Medium	<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 medium due to the submission variances.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
Genesis are currently working with the council in installing a Golden meter in order 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 in order to obtain monthly data output.		Continuous improvement	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Genesis are expecting to remove this non-compliance by utilising the CMS system outputs to settle energy volumes until then Genesis will continue to work with WDC in order obtain a monthly report.		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 the correct 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 each item 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

Lamp make, model, wattage and ballast wattage are included in the database.

Examination of the database during the previous audit found two items of load that had an incorrect ballast recorded. This matter was resolved at the time of the audit. No further discrepancies were identified.

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 348 items of load.

Audit commentary

The field audit findings are shown in the table below.

Finding	Quantity	Comments
Lights in the field not in the database	2	These have been provided to WDC to resolve
Lights in the database not in the field	1	One light without a lamp in the fitting. WDC is investigating this.
Incorrect wattage	2	These have been provided to WDC to resolve

I found two additional lamps in the field than were not recorded in the database. This is recorded as non-compliance.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 2.5 With: Clause 11(2A) of Schedule 15.3 From: 01-Apr-21 To: 07-Oct-21	Two additional lights found in the field. Potential impact: Low Actual impact: Low Audit history: None Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
Low	The controls are recorded as strong because they mitigate risk to an acceptable level. The impact on settlement and participants is minor; therefore the audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status

WDC has been advised of the audit findings and are aware of the need to ensure all asset information is complete and accurate.		Identified
Preventative actions taken to ensure no further issues will occur	Completion date	

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**.

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

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. WDC have passed the details of these lights to Horizon to investigate. The outcome of these investigations will need to be examined as part of the next Horizon Distributor audit.

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 2021, 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 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	348 items of load were checked.

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

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	100.0	Wattage from survey is the same as the database to one decimal place
R _L	98.2	With a 95% level of confidence, it can be concluded that the error could be between -1.8% and +1.4%
R _H	101.4	

These results were categorised in accordance with the “Distributed Unmetered Load Statistical Sampling Audit Guideline”, effective from 01/02/19 and the table below shows that Scenario A (detailed below) applies.

The conclusion from Scenario A is that there is good accuracy with a high level of confidence.

In absolute terms the installed capacity is estimated to be 0.0 kW lower than the database indicates.

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

In absolute terms, total annual consumption is estimated to be 100 kWh lower than the DUML database indicates.

There is a 95% level of confidence that the annual consumption is between 10,600 kWh lower to 7,800 kWh p.a. higher than the database indicates.

Scenario	Description
<p>A - Good accuracy, good precision</p>	<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.
<p>B - Poor accuracy, demonstrated with statistical significance</p>	<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>
<p>C - Poor precision</p>	<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. Amenity lights were previously recorded in the database against ICP 1000023042BPD32, but they are now recorded against ICP 1000023047BP07D.

Location accuracy

Analysis of the RAMM database extract found compliance.

Change management process findings.

Horizon is now the contractor and paperwork is updated directly into RAMM by Horizon. Pocket RAMM may be used by the contractors 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 was demonstrated during the site audit. It controls the lights burn times and 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. 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.

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

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. WDC have passed the details of these lights to Horizon to investigate.

Audit outcome

Non-compliant

Non-compliance	Description		
<p>Audit Ref: 3.1 With: Clause 15.2 and 15.37B(b) From: 01-Apr-21 To: 07-Oct-21</p>	<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> <p>Potential impact: Medium Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2</p>		
Audit risk rating	Rationale for audit risk rating		
<p>Low</p>	<p>The controls are recorded as moderate because they mitigate risk most of the time but there is room for improvement</p> <p>The audit risk rating is assessed to be low due to the error in kWh.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>Genesis has discussed the audit findings with WDC with regards to the importance of tracking of change. Genesis will continue to work with WDC in order to obtain monthly reporting until then Genesis has been provided with a most recent snapshot of WDC RAMM data base and will use this in order to historically review volumes submitted to the market.</p> <p>Genesis will be re-engaging with the council with regards to installing a golden meter in order to validate accuracy within CMS data base as the council believes it's the trader's responsibility to have this meter installed to validate their database accuracy. The agreement between customer and trader for the cost to install meters will need to be established prior to any metering installations being completed.</p>		<p>Continuous improvement</p>	<p>Identified</p>
Preventative actions taken to ensure no further issues will occur		Completion date	
<p>Genesis are expecting to remove this non-compliance by utilising the CMS system outputs to settle energy volumes once an agreement has been reached with regards to the instalment of the golden meter until then Genesis will continue to work with WDC in order to obtain a monthly report.</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

Genesis reconciles this DUML load using the UNM and NST profiles and the registry daily kWh figure.

I compared the submission volumes with the load recorded in the database extract provided for this audit for August 2021 against the volumes submitted by Genesis and found the following discrepancies.

ICPs	Fittings number from August 2021 submission	Fittings number from August 2021 database extract	Differences	kWh value submitted	Calculated kWh value from database	Differences
1000023042BPD32	11	0	+11	190.72	0	+190.72
1000023060BP0E2	199	199	0	4,231.78	4,263.75	-31.97
1000023047BP07D	2,250	2,337	+87	42,640.87	45,490.53	-2,849.66
Total month kWh difference						-2,690.91

Annualised this will result in an estimated annual under submission of approx. 32,291 kWh. This is calculated on the difference in the daily kWh figures.

The results of the field audit found that in absolute terms, total annual consumption is estimated to be 100 kWh lower than the DUML database indicates, confirming that the database has a high level of accuracy.

WDC have installed a central management system called Telensa as part of the LED replacement programme of work. This was demonstrated during the site audit. It controls the light burn times and has replaced the networks relays previously used therefore the fixed burn hours used by Genesis to calculate submission will not be representative of the actual burn hours. This is recorded as non-compliance.

Submission is based on a snapshot of the database at the end of the month and does not consider historic adjustments or the fact that lights can be livened before they are entered into the database.

The Telensa system calculates the kWh consumption across the streetlight network. Genesis has analysed the output of Telensa and concluded it is accurate. Genesis intends to use this output once a check meter is installed, and a profile is set up.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 3.2 With: Clause 15.2 and 15.37B(c) From: 01-Apr-21 To: 07-Oct-21	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. Potential impact: High Actual impact: Medium Audit history: Multiple times previously Controls: Weak Breach risk rating: 6		
Audit risk rating	Rationale for audit risk rating		
Medium	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 medium due to the submission variances.		
Actions taken to resolve the issue		Completion date	Remedial action status
Genesis are currently working with the council in installing a Golden meter in order 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 in order to obtain monthly data output.		Continuous improvement	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Genesis are expecting to remove this non-compliance by utilising the CMS system outputs to settle energy volumes once an agreement has been reached with regards to the instalment of the golden meter until then Genesis will continue to work with WDC in order obtain a monthly report.		Continuous improvement	

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. 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.

Amenity lights were previously recorded in the database against ICP 1000023042BPD32, but they are now recorded against ICP 1000023047BP07D, however Genesis is still submitting for ICP 1000023042BPD32.

This audit found four non-compliances.

The future risk rating of 15 indicates that the next audit be completed in 12 months. I agree with this recommendation; it should allow sufficient time to arrange for a check meter to be installed and to establish back-office processes to enable submission using a different profile.

PARTICIPANT RESPONSE

Genesis will be re-engaging with the council with regards to installing a golden meter in order to validate accuracy within CMS data base as the council believes it's the trader's responsibility to have this meter installed to validate their database accuracy. The agreement between customer and trader for the cost to install meters will need to be established prior to any metering installations being completed until then Genesis will continue to work with WDC in order obtain a monthly report.