

ELECTRICITY INDUSTRY PARTICIPATION CODE
DISTRIBUTED UNMETERED LOAD AUDIT REPORT

VERITEK

For

MARLBOROUGH LINES LIMITED
AND GENESIS ENERGY LIMITED

Prepared by: Steve Woods

Date audit commenced: 23 October 2020

Date audit report completed: 19 July 2021

Audit report due date: 01-Dec-20

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EXECUTIVE SUMMARY

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

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

An EAM database is managed by Marlborough Lines on behalf of Marlborough District Council (MDC), Port Marlborough (PMNZ) and NZTA in relation to this load with monthly reporting to Genesis. The field work, asset data capture, and database population is conducted by Marlborough Lines' staff.

The field audit was undertaken of a statistical sample of 426 items of load on 3rd & 4th November 2020. This found a high level of accuracy and the database accuracy was within the required +/-5%.

Overall Marlborough Lines have robust processes in place for the management of the streetlight database.

The issue identified in the last audit of the EAM database found that when changes are made, only the record present at the time the report is run is recorded, not the historical information showing dates of changes is provided is still present. This does not meet the database requirements and is recorded as non-compliance below.

The audit found five non-compliances and makes three recommendations. The future risk rating of 13 indicates that the next audit be completed in 12 months. I agree with this recommendation.

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	Submitted values do not match the database values resulting in an estimated over submission of 1,104 kWh per annum. The monthly wattage report provided does not track changes at a daily basis and is provided as a snapshot.	Weak	Low	3	Identified
All load recorded in the database	2.5	11(2A) of Schedule 15.3	One additional item of load found in the field.	Strong	Low	1	Identified
Tracking of load change	2.6	11(3) of Schedule 15.3	Changes not tracked.	Weak	Low	3	Identified
Audit trails	2.7	11(4) of Schedule 15.3	Audit trail not visible.	Weak	Low	3	Identified
Volume information accuracy	3.2	15.2 and 15.37B(c)	Submitted values do not match the database values resulting in an estimated over submission of 1,104 kWh per annum. The monthly wattage report provided does not track changes at a daily basis and is provided as a snapshot.	Weak	Low	3	Identified
Future Risk Rating						13	

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

RECOMMENDATIONS

Subject	Section	Description
Deriving submission	2.1	Remove ICP 0004450225ML4AC from the non-streetlight items of load recorded in the database.
		Check the number of items of load between the database and the values being sent to Genesis.
Database accuracy	3.1	Ensure LED light descriptions contain sufficient information to confirm the correct wattage has been applied.

ISSUES

Subject	Section	Description	Issue
		Nil	

1. ADMINISTRATIVE

1.1. Exemptions from Obligations to Comply with Code

Code reference

Section 11 of Electricity Industry Act 2010.

Code related audit information

Section 11 of the Electricity Industry Act provides for the Electricity Authority to exempt any participant from compliance with all or any of the clauses.

Audit observation

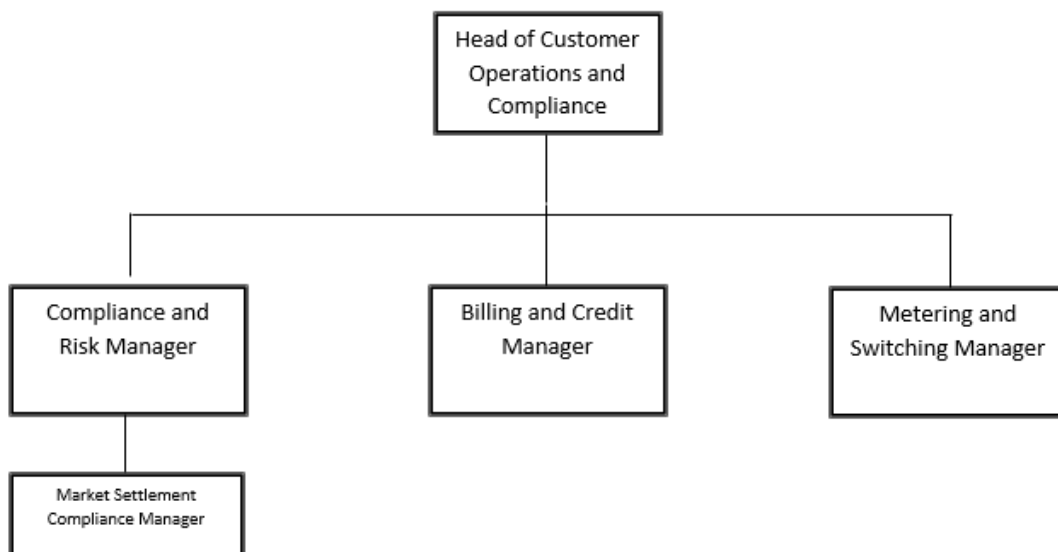
The Electricity Authority's website was reviewed to identify any exemptions relevant to the scope of this audit.

Audit commentary

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

1.2. Structure of Organisation

Genesis provided a copy of their organisational structure.



1.3. Persons involved in this audit

Auditor:

Name	Company	Role
Steve Woods	Veritek Limited	Lead Auditor

Name	Company	Role
Claire Stanley	Veritek Limited	Supporting Auditor

Other personnel assisting in this audit were:

Name	Title	Company
Craig Young	Excellence Leader - Reconciliation	Genesis Energy
Grace Hawken	Technical Specialist – Reconciliations Team	Genesis Energy
Robert Miller	GIS Operator	Marlborough Lines
Sally King	Asset Records Clerk	Marlborough Lines

1.4. Hardware and Software

The database used by Marlborough Lines is commonly known as “Info EAM”. This has been used since October 2015.

Marlborough Lines confirmed that the database back-up is in accordance with standard industry procedures, which includes servers at two locations with backup tapes rotated between the different premises. 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	Profile	Number of items of load	Database wattage (watts)
0004450225ML4AC	MDC & NZTA	SST	5,303	283,408
0004450157ML277	Port Marlborough	SST	57	9,227
Total			5,360	292,635

1.7. Authorisation Received

All information was provided directly by Genesis or Marlborough Lines.

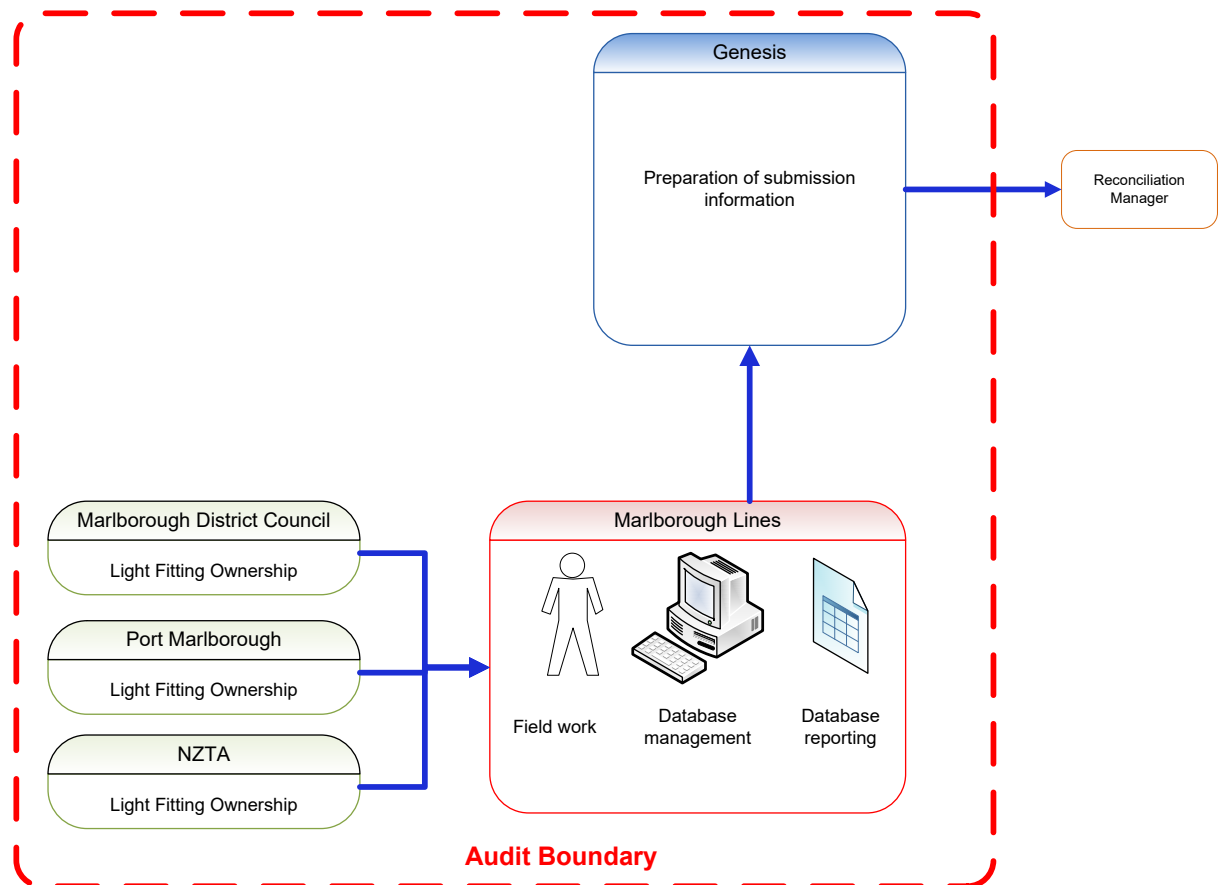
1.8. Scope of Audit

This audit of the Marlborough Lines database and processes was conducted at the request of 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.

Marlborough Lines manage the installation, maintenance and database management of the DUML for MDC, NZTA and PMNZ. Reporting is provided to Genesis on a monthly basis. 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.



Marlborough Line's contract to carry out the field work and manage the database expired in June 2019 but is being extended on a month by month basis. The council is expected to initiate negotiations, but these had not been initiated at the time of this audit.

The field audit was undertaken of a statistical sample of 426 items of load on 3rd & 4th November 2020.

1.9. Summary of previous audit

Genesis provided a copy of the last audit report undertaken by Rebecca Elliot of Veritek Limited in December 2019. The table below records the findings.

Table of Non-Compliance

Subject	Section	Clause	Non-compliance	Status
Deriving submission information	2.1	11(1) of Schedule 15.3	The monthly wattage report provided does not track changes at a daily basis and is provided as a snapshot.	Still existing
			Festive lighting recorded as connected all year.	Cleared
Tracking of load change	2.6	11(3) of Schedule 15.3	Changes not tracked.	Still existing
Audit trails	2.7	11(4) of Schedule 15.3	Audit trail not visible.	Still existing
Database accuracy	3.1	15.2 and 15.37B(b)	Incorrect ballasts applied in EAM resulting in an estimated annual over submission of 7,231 kWh if these were used for submission.	Cleared
			The monthly wattage report provided does not track changes at a daily basis and is provided as a snapshot.	Still existing
			Festive lighting recorded as connected all year.	Cleared
Volume information accuracy	3.2	15.2 and 15.37B(c)	The monthly database extract provided does not track changes at a daily basis and is provided as a snapshot.	Still existing
			Festive lighting recorded as connected all year.	Cleared

Table of Recommendations

Subject	Section	Recommendation for Improvement	Status
Deriving submission	2.1	Remove the ICP from the non-streetlight items of load recorded in the database.	Still existing
Database accuracy	3.1	Apply wattage values from within the database.	
		Ensure LED light descriptions contain sufficient information to confirm the correct wattage has been applied.	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 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 and the application of profiles was checked. The database was checked for accuracy.

Audit commentary

Genesis reconciles this DUML load using the SST profile.

The total volume submitted to the Reconciliation Manager is based on a monthly database report derived from the Marlborough Lines EAM database and the “burn time” which is sourced from data loggers. The methodology is compliant.

I checked the submission values for September 2020 and found a difference:

ICPs	Fittings number from Sept 2020 submission	Fittings number from database extract	Differences	kWh value submitted	Calculated kWh value from database	kWh Differences
0004450225ML4AC	5166	5303	137	103,860	103,848	12
0004450157ML277	57	57	0	3,473	3,381	92
Total month kWh over submission						104

I note the 60 items of load recorded for ICP 0004450225ML4AC that relate to items of load that are not streetlight assets and have no wattage value associated are still present. I repeat the last audit’s recommendation that the ICP is removed to correct this.

Recommendation	Description	Audited party comment	Remedial action
Deriving submission information	Remove ICP 0004450225ML4AC from the non-streetlight items of load recorded in the database.	Genesis has not been able to ascertain the assets in question as the reporting from MARL did not include these assets. After the Auditor provided the extraction from MARL database it was clear that the ped xing “reflective disc” were assigned to the streetlight icp. Genesis will be requesting the ICP to be updated to something else.	Identified

This leaves a difference of 77 additional lights in the database extract. These do not appear to be being reconciled however the wattage recorded in the database reflects almost no submission difference between the extracts and the difference found is due to the different timing of extracts. I recommend that the number of items of load is reconciled back to the database, as it appears that items of load with multiple lights associated may be causing this discrepancy.

Recommendation	Description	Audited party comment	Remedial action
Deriving submission information	Check the number of items of load between the database and the values being sent to Genesis.	Genesis is currently questioning MARL on how they count their assets. The report provided by MARL seems to aggregate by pole, yet the number of assets differs as does the wattage. Once Genesis confirms which count is accurate the corrections will be made.	Identified

The wattage associated with the Port Marlborough ICP 0004450157ML277 is lower than that being submitted. This is resulting in an estimated annual over submission 1,104 kWh per annum (assuming the difference for the month of September and multiplying it by 12). This is recorded as non-compliance below.

It was recorded in the last three audits, that the ballasts recorded in EAM were not used and Marlborough Lines added the ballasts outside of the database as part of the monthly wattage report sent to Genesis. This has now been resolved and the correct ballast is now recorded in the database and is included in the Circuit Wattage and included in the monthly wattage report.

The field audit indicated that the database was within the allowable +/-5% variance threshold and is therefore deemed to be accurate. This is discussed in **section 3.1**.

As reported in the last audit, the current monthly report is provided as a snapshot and this practice is non-compliant. The database contains a "Commission date". When a wattage is changed in the database due to a physical change or a correction, only the record present at the time the report is run is recorded, not the historical information showing dates of changes is provided. It is unknown whether the database is capable of tracking this or not.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 2.1 Clause 11(1) of Schedule 15.3 From: 01-Nov-19 To: 30-Sep-20	Submitted values do not match the database values resulting in an estimated over submission of 1,104 kWh per annum. The monthly wattage report provided does not track changes at a daily basis and is provided as a snapshot. Potential impact: Low Actual impact: Low Audit history: Three times previously Controls: Weak Breach risk rating: 3		
Audit risk rating	Rationale for audit risk rating		
Low	The controls are rated as weak as whilst the processes for updating the database are robust it was not proven that the database is able to meet the requirements of the code. The impact is assessed to be low based on the anticipated volumes associated with the non-compliances found.		
Actions taken to resolve the issue		Completion date	Remedial action status
For ICP 0004450157ML277 where there was a recorded variance. if Genesis has not received the data prior to settlement date/time frames Genesis will forward estimate off previous data for the initial submission. Once the data is received the database revision is reviewed and any corrections made. Genesis believe that for the Dec-20 data the FSE was provided due to the above event happening and subsequently the revisions have lowered the volumes provided to the market. Genesis are currently reviewing their data reporting from the Distributor to include the change requirements.		01/06/2021	Identified
Preventative actions taken to ensure no further issue will occur		Completion date	
Reporting from the Distributor requires changes to ensure complete details are being provided to the trader enabling settlement to accurately be determined.		01/06/2021	

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. As detailed in **section 2.1**, there are 60 items of load that are recorded in the database with an ICP recorded against them that are not streetlight assets and therefore have no wattage value associated e.g. pedestrian crossing pole with reflector. I have repeated the last audit's recommendation in **section 2.1**, that the ICP is removed to correct this.

Audit outcome

Compliant

2.3. Location of each item of load (Clause 11(2)(b) of Schedule 15.3)

Code reference

Clause 11(2)(b) of Schedule 15.3

Code related audit information

The DUMML database must contain the location of each DUMML item.

Audit observation

The databases were checked to confirm the location is recorded for all items of load.

Audit commentary

The database has been updated with GPS co-ordinates for all but 112 items of load. The field audit found that some of the GPS co-ordinates are not precise in all instances e.g. one light is in the ocean. All items of load have sufficient address details to meet the requirements of this clause.

Audit outcome

Compliant

2.4. Description and capacity of load (Clause 11(2)(c) and (d) of Schedule 15.3)

Code reference

Clause 11(2)(c) and (d) of Schedule 15.3

Code related audit information

The DUMML database must contain:

- *a description of load type for each item of load and any assumptions regarding the capacity*
- *the capacity of each item in watts.*

Audit observation

The database was checked to confirm it contained a field for lamp type and wattage capacity and included any ballast or gear wattage, and that each item of load had a value recorded in these fields.

Audit commentary

The database contains fields for fitting type and lamp type in addition to a nominal lamp wattage and circuit wattage fields and all were populated for each item of load.

The accuracy of the ballast wattages used for submission are discussed in **sections 3.1** and **3.2**.

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 426 items of load on 3rd & 4th November 2020.

Audit commentary

The field audit discrepancies are detailed in the table below:

Street/Area	Database Count	Field Count	Lamp no. difference	No of incorrect lamp wattage	Comments
Wilson Street Seddon	6	7	1		1 x 28W LED lamp found in the field
Grand Total	426	427	+1		

The field audit found one additional lamp. The accuracy of the database is discussed in **section 3.1**.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 2.5 With: Clause 11(2A) of Schedule 15.3 From: 01-Nov-19 To: 30-Sep-20	One additional item of load 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 rated as strong as Marlborough Lines have robust processes to ensure that changes are tracked, and this is reflected in the high level of accuracy found in the database. The impact is assessed to be low as the database was found to be within the allowable accuracy threshold as detailed in section 3.1 .		
Actions taken to resolve the issue		Completion date	Remedial action status

Genesis to request the asset to be added to the database	01/06/2021	Identified
Preventative actions taken to ensure no further issue 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 DUMML database must track additions and removals in a manner that allows the total load (in kW) to be retrospectively derived for any given day.

Audit observation

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

Audit commentary

As reported in the last audit, the database contains a "Commission date". When a wattage is changed in the database due to a physical change or a correction, only the record present at the time the report is run is recorded, and not the historical information showing dates of changes. The audit trail may be able to be retrieved but this is not visible as required by this clause. This is recorded as non-compliance.

Audit outcome

Non-compliant

Non-compliance	Description	
Audit Ref: 2.6 Clause 11(3) of Schedule 15.3 From: 24-Oct-18 To: 30-Sep-20	Changes not tracked. Potential impact: Low Actual impact: Low Audit history: Once previously Controls: Weak Breach risk rating: 3	
Audit risk rating	Rationale for audit risk rating	
Low	The controls are rated as weak as whilst the processes for updating the database are robust it was not proven that the database is able to meet the requirements of the code. The audit risk rating is low as the volume of changes is not high.	
Actions taken to resolve the issue		Completion date
Reporting from the Distributor requires changes to ensure complete details are being provided to the trader enabling settlement to accurately be determined.		01/06/2021
		Identified

Preventative actions taken to ensure no further issue will occur	Completion date	
Monitor the reporting once change tracking is established.	01/06/2021	

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

As reported in the last audit report, the database contains a "Commission date". When a wattage is changed in the database due to a physical change or a correction, only the record present at the time the report is run is recorded, and not the historical information showing dates of changes. The audit trail may be able to be retrieved but this is not visible as required by this clause. This is recorded as non-compliance.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 2.7 Clause 11(4) of Schedule 15.3 From: 24-Oct-18 To: 30-Sep-20	Audit trail not visible. Potential impact: Low Actual impact: Low Audit history: Once previously Controls: Weak Breach risk rating: 3		
Audit risk rating	Rationale for audit risk rating		
Low	The controls are rated as weak as whilst the processes for updating the database are robust it was not proven that the database is able to meet the requirements of the code. The audit risk rating is low as the volume of changes is not high.		
Actions taken to resolve the issue		Completion date	Remedial action status

Genesis will require development with the reporting party to provide all change information within the reporting period, not just a snapshot.	01/06/2021	Identified
Preventative actions taken to ensure no further issue will occur	Completion date	
Genesis will provide an exception report where new assets are present within the period to confirm if it's "new" or a "Replacement". Customer reporting has been implemented to identify the changes within period	01/06/2021	

3. ACCURACY OF DUML DATABASE

3.1. Database accuracy (Clause 15.2 and 15.37B(b))

Code reference

Clause 15.2 and 15.37B(b)

Code related audit information

Audit must verify that the information recorded in the retailer's DUML database is complete and accurate.

Audit observation

The DUML Statistical Sampling Guideline was used to determine the database accuracy. The table below shows the survey plan.

Plan Item	Comments
Area of interest	Marlborough DC, NZTA & PMNZ
Strata	<p>The database contains items of load in Marlborough area.</p> <p>The processes for the management of MDC, NZTA and PMNZ items of load are the same, so I decided to place the items of load into four strata, as follows:</p> <ol style="list-style-type: none"> 1. Rural, 2. Urban A-H, 3. Urban I-O, and 4. Urban P-W
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 68 sub-units.
Total items of load	426 items of load were checked.

Wattages were checked for alignment with the published standardised wattage table produced by the Electricity Authority or against LED light specifications where available.

Audit commentary

A statistical sample of 426 items of load found that the field data was 100.2% of the database data for the sample checked.

Result	Percentage	Comments
The point estimate of R	100.2%	Wattage from survey is higher than the database wattage by 0.2%
R _L	100.0%	With a 95% level of confidence it can be concluded that the error could be up to +1.0%
R _H	101.0%	

These results were categorised in accordance with the “Distributed Unmetered Load Statistical Sampling Audit Guideline”, effective from 01/02/19. The table below shows that Scenario A (detailed below) applies, and the best available estimate indicates that the database is accurate within $\pm 5.0\%$.

- In absolute terms the installed capacity is estimated to be 1 kW higher than the database indicates.
- There is a 95% level of confidence that the installed capacity is between 0 and 3 kW higher than the database.
- In absolute terms, total annual consumption is estimated to be 2,200 kWh higher than the DUML database indicates.
- There is a 95% level of confidence that the annual consumption is between 0 to 12,800 kWh p.a. higher than the database indicates.

Scenario	Description
A - Good accuracy, good precision	<p>This scenario applies if:</p> <p>(a) R_H is less than 1.05; and</p> <p>(b) R_L is greater than 0.95</p> <p>The conclusion from this scenario is that:</p> <p>(a) the best available estimate indicates that the database is accurate within $\pm 5\%$; and</p> <p>(b) this is the best outcome.</p>
B - Poor accuracy, demonstrated with statistical significance	<p>This scenario applies if:</p> <p>(a) the point estimate of R is less than 0.95 or greater than 1.05</p> <p>(b) as a result, either R_L is less than 0.95 or R_H is greater than 1.05.</p> <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> <p>(a) the point estimate of R is between 0.95 and 1.05</p> <p>(b) R_L is less than 0.95 and/or R_H is greater than 1.05</p> <p>The conclusion from this scenario is that the best available estimate is not precise enough to conclude that the database is accurate within $\pm 5\%$</p>

Lamp Wattages and Descriptions

Wattages for all items of load were checked against the published standardised wattage table produced by the Electricity Authority and found the lamp wattage including the ballast recorded in EAM are correct.

As reported in the last audit there are more than 30 different LED light types recorded in the database. The light descriptions are insufficient to confirm the correct wattage has been applied. “As-builts” were examined as part of the field audit undertaken and this confirmed that the light descriptions provided confirmed the correct wattage had been applied. I repeat the last audit’s recommendation that the full light descriptions be included in the database so that the LED wattages can be confirmed.

Recommendation	Description	Audited party comment	Remedial action
Database accuracy	Ensure LED light descriptions contain sufficient information to confirm the correct wattage has been applied.	Genesis requires better reporting from the network that maintains the database for Genesis to provide any exception reporting. Genesis will mention that the lamp descriptions require work to enable a clear representation of the asset connected, as outlined in the audit.	Identified

NZTA lighting

NZTA lights are included in the load recorded by Marlborough DC.

ICP accuracy

All items of load have the correct ICP recorded.

Location accuracy

The location details were found to be accurate.

Change Management

The new connections process remains the same as was recorded last audit - Marlborough Lines is the contractor for installation and maintenance of all lighting. When new subdivisions or upgrades are conducted, an “as-built” plan is provided. Lighting for new subdivisions is updated as soon as the subdivision is electrically connected and the “commissioning date” is used as the start date. Most are updated within the same month of electrical connection. Light numbers are assigned based on “as-builts” in the database. All lights have the GPS co-ordinates recorded as well as the physical locations. Marlborough Lines carry out field checks to confirm that the “as-builts” reflect what has been installed in the field. As detailed above the LED light descriptions are not sufficient to determine the correct wattage is recorded and I repeat the last audit’s recommendation that the full light description is used from the “as-built” drawings.

The change management process remains the same as was recorded in the last audit. A database check is included as part of the lamp replacement process. The job sheet comes directly from the EAM database and requires the field crew to indicate if any discrepancies are found and need to be updated. Daily updates are made to EAM and all changes are made prior to the end of the month.

The current monthly report is provided as a snapshot and this practice is non-compliant and this is recorded as non-compliance in **sections 2.1** and **3.2**. The database contains a “Commission date”. When a wattage is changed in the database due to a physical change or a correction, only the record present at the time the report is run is recorded, not the historical information showing dates of changes is provided. It is unknown whether the database is capable of tracking this or not.

The LED rollout project is largely complete except for some decorative lights and the NZTA lights still to be replaced.

Patrols are undertaken by Marlborough Lines and results processed into EAM.

Audit outcome

Compliant

3.2. Volume information accuracy (Clause 15.2 and 15.37B(c))

Code reference

Clause 15.2 and 15.37B(c)

Code related audit information

The audit must verify that:

- volume information for the DUML is being calculated accurately
- profiles for DUML have been correctly applied.

Audit observation

The submission was checked for accuracy for the month the database extract was supplied. This included:

- checking the registry to confirm that the ICP has the correct profile and submission flag, and
- checking the database extract combined with the burn hours against the submitted figure to confirm accuracy.

Audit commentary

Genesis reconciles this DUML load using the SST profile.

The total volume submitted to the Reconciliation Manager is based on a monthly database report derived from the Marlborough Lines EAM database and the “burn time” which is sourced from data loggers. The methodology is compliant. I checked the accuracy and as detailed in **section 2.1**, found a variance of an estimated 1,104 kWh of over submission for ICP 0004450157ML277. This is recorded as non-compliance below.

The field audit confirmed that the database meets the accuracy thresholds and is confirmed to be compliant. This is discussed in **section 3.1**.

As reported in the last audit report, the current monthly report is provided as a snapshot and this practice is non-compliant. The database contains a “Commission date”. When a wattage is changed in the database due to a physical change or a correction, only the record present at the time the report is run is recorded, not the historical information showing dates of changes is provided. It is unknown whether the database is capable of tracking this or not.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.2 Clause 15.2 and 15.37B(c) From: 01-Nov-19 To: 30-Sep-20	Submitted values do not match the database values resulting in an estimated over submission of 1,104 kWh per annum. The monthly wattage report provided does not track changes at a daily basis and is provided as a snapshot. Potential impact: Low Actual impact: Low Audit history: Three times previously Controls: Weak Breach risk rating: 3
Audit risk rating	Rationale for audit risk rating

Low	<p>The controls are rated as weak as whilst the processes for updating the database are robust it was not proven that the database is able to meet the requirements of the code.</p> <p>The impact is assessed to be low based on the anticipated volumes associated with the non-compliances found.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>For ICP 0004450157ML277 where there was a recorded variance. Genesis if not received the data prior to settlement date/time frames Genesis will forward estimate off previous data for the initial submission. Once the data is received the database revision is reviewed and any corrections made. Genesis believe that for the Dec-20 data the FSE was provided due to the above event happening and subsequently the revisions have lowered the volumes provided to the market. Genesis are currently reviewing their data reporting from the Distributor to include the change requirements.</p>		01/06/2021	Identified
Preventative actions taken to ensure no further issue will occur		Completion date	
<p>Reporting from the Distributor requires changes to ensure complete details are being provided to the trader enabling settlement to accurately be determined.</p>		01/06/2021	

CONCLUSION

An EAM database is managed by Marlborough Lines on behalf of Marlborough District Council (MDC), Port Marlborough (PMNZ) and NZTA in relation to this load with monthly reporting to Genesis. The field work, asset data capture, and database population is conducted by Marlborough Lines' staff.

The field audit was undertaken of a statistical sample of 426 items of load on 3rd & 4th November 2020. This found a high level of accuracy and the database accuracy was within the required +/-5%.

Overall Marlborough Lines have robust processes in place for the management of the streetlight database.

The issue identified in the last audit of the EAM database found that when changes are made, only the record present at the time the report is run is recorded, not the historical information showing dates of changes is provided is still present. This does not meet the database requirements and is recorded as non-compliance below.

The audit found five non-compliances and makes three recommendations. The future risk rating of 13 indicates that the next audit be completed in 12 months. I agree with this recommendation.

PARTICIPANT RESPONSE

Genesis is awaiting confirmation from the reporting provider to ascertain whether their system can provide adequate reporting to establish change tracking. Genesis also requires the network to make the necessary amendments to provide clarity of connected assets and load. Genesis are hoping to have the required reporting in place as soon as possible, but are subject to the providers ability to meet these requirements. Genesis can now confirm as @ 01/06/2021 that there has been an adjustment in reporting to provide genesis with changes albeit manually provided.