

ELECTRICITY INDUSTRY PARTICIPATION CODE  
DISTRIBUTED UNMETERED LOAD AUDIT REPORT

VERITEK

For

MACKENZIE DISTRICT COUNCIL AND  
GENESIS ENERGY LIMITED

NZBN: 9429038698279

Prepared by: Steve Woods

Date audit commenced: 12 September 2022

Date audit report completed: 30 September 2022

Audit report due date: 21 October 2022

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## EXECUTIVE SUMMARY

This audit of the **Mackenzie District Council (MDC)** 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.

The database is remotely hosted by thinkproject New Zealand Ltd and is managed by MDC, who is Genesis' customer. The fieldwork is conducted by NetCon.

The field audit was undertaken of a statistical sample of 147 items of load on 17 September 2022. This found the database is confirmed to be accurate within the allowable  $\pm 5\%$  accuracy threshold.

Service Requests and Purchase orders are issued to NetCon to complete fieldwork, the paperwork is returned to MDC who update the changes in a spreadsheet.

Genesis reconciles this DUMML load using the SST profile. I checked the submission data for August 2022 for the five ICPs associated with the MDC database using the value submitted by Genesis and the database information and confirmed the calculation for August 2022 was correct.

The previous audit identified a difference between the submission values and the database extract provided for the audit. This was due to no up to date data extract having been provided. A new database extract was provided for August 2022 and was used to calculate submission. I checked the August 2022 submission and found that it matched. Genesis has not carried out revisions using the updated data resulting an estimated over submission of 63,045 kWh from November 2021 to July 2022. This is recorded as a non-compliance. They intend to carry out revisions to correct this for the remaining available revisions.

The audit found five non-compliances and makes no recommendations. The future risk rating of 18 indicates that the next audit be completed in six months. I have considered this in conjunction with Genesis' comments and recommend that the next audit be in six months.

The matters raised are detailed below:

## AUDIT SUMMARY

### NON-COMPLIANCES

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Deriving submission information	2.1	11(1) of Schedule 15.3	<p>Revisions have not been made from November 2021 to July 2022 resulting in an estimated over submission of 63,045 kWh.</p> <p>Nine items of load do not have an ICP number recorded resulting in an estimated minor under submission of 1,691 kWh per annum.</p> <p>Monthly reporting is not being provided to Genesis, submission is based on a historical snapshot and does not consider changes or adjustments.</p>	Moderate	High	6	Investigating
ICP identifier and items of load	2.2	Clause 11(2)(a) and (aa) of Schedule 15.3	Nine items do not have an ICP number recorded resulting in an estimated under submission of 1,691 kWh per annum.	Moderate	Low	2	Investigating
All load recorded in the database	2.5	Clauses 11(2A) of Schedule 15.3	Five additional lamps identified in the field of 147 items of load sampled.	Moderate	Low	2	Investigating
Database accuracy	3.1	15.2 and 15.37B(b)	Nine items of load do not have an ICP number recorded resulting in an estimated under submission of 1,691 kWh per annum.	Moderate	Low	2	Investigating
Volume information accuracy	3.2	15.2 and 15.37B(c)	Revisions have not been made from November 2021 to July 2022 resulting in an estimated over submission of 63,045 kWh.	Moderate	High	6	Investigating

			<p>Nine items of load do not have an ICP number recorded resulting in an estimated minor under submission of 1,691 kWh per annum.</p> <p>Monthly reporting is not being provided to Genesis, submission is based on a historical snapshot and does not consider changes or adjustments.</p>				
<b>Future Risk Rating</b>							<b>18</b>

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

#### RECOMMENDATIONS

Subject	Section	Description	Recommendation
		Nil	

#### ISSUES

Subject	Section	Description	Issue
		Nil	

## 1. ADMINISTRATIVE

### 1.1. Exemptions from Obligations to Comply with Code

#### Code reference

*Section 11 of Electricity Industry Act 2010.*

#### Code related audit information

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

#### Audit observation

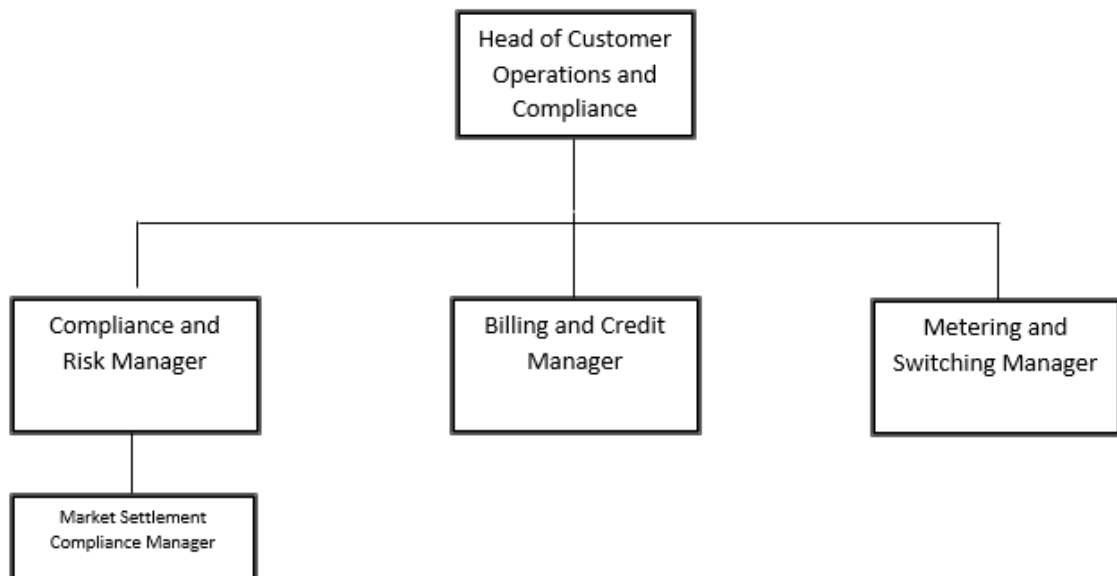
The Electricity Authority's website was reviewed to identify any exemptions relevant to the scope of this audit.

#### Audit commentary

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

### 1.2. Structure of Organisation

Genesis provided a copy of their organisational structure:



### 1.3. Persons involved in this audit

Auditors:

Name	Company	Role
Steve Woods	Veritek Limited	Lead Auditor
Claire Stanley	Veritek Limited	Supporting Auditor

Other personnel assisting in this audit were:

Name	Title	Company
Scott McKenzie	Road Engineering Technician	Mackenzie District Council
Nirav Teli	DUML Data & Stakeholder Lead	Genesis Energy

### 1.4. Hardware and Software

The SQL database used for the management of DUML is remotely hosted by thinkproject New Zealand Limited. The database is commonly known as “RAMM” which stands for “Road Assessment and Maintenance Management”. The specific data used for DUML is held in the Streetlight tables. thinkproject New Zealand Limited backs up the database and assists with disaster recovery as part of their hosting service.

Access to the database is secure by way of password protection.

Systems used by the trader to calculate submissions are assessed as part of their reconciliation participant audits.

### 1.5. Breaches or Breach Allegations

There are no breach allegations relevant to the scope of this audit.

## 1.6. ICP Data

ICP Number	Description	NSP	Profile	Number of items of load	Database wattage (watts)
0000000007ALB68	Streetlighting	TKA0331	SST	374	15,174
0000000008AL4B6	Streetlighting	TWZ0331	SST	477	13,234
0000000003ALA62	Streetlighting	ABY0111	SST	211	12,793
0000010005MO321	Streetlighting	MMT0111	SST	42	924
0000020005MO20D	Streetlighting	MMO0111	SST	18	306
Total				1,122	42,431

## 1.7. Authorisation Received

All information was provided directly by Genesis and MDC.



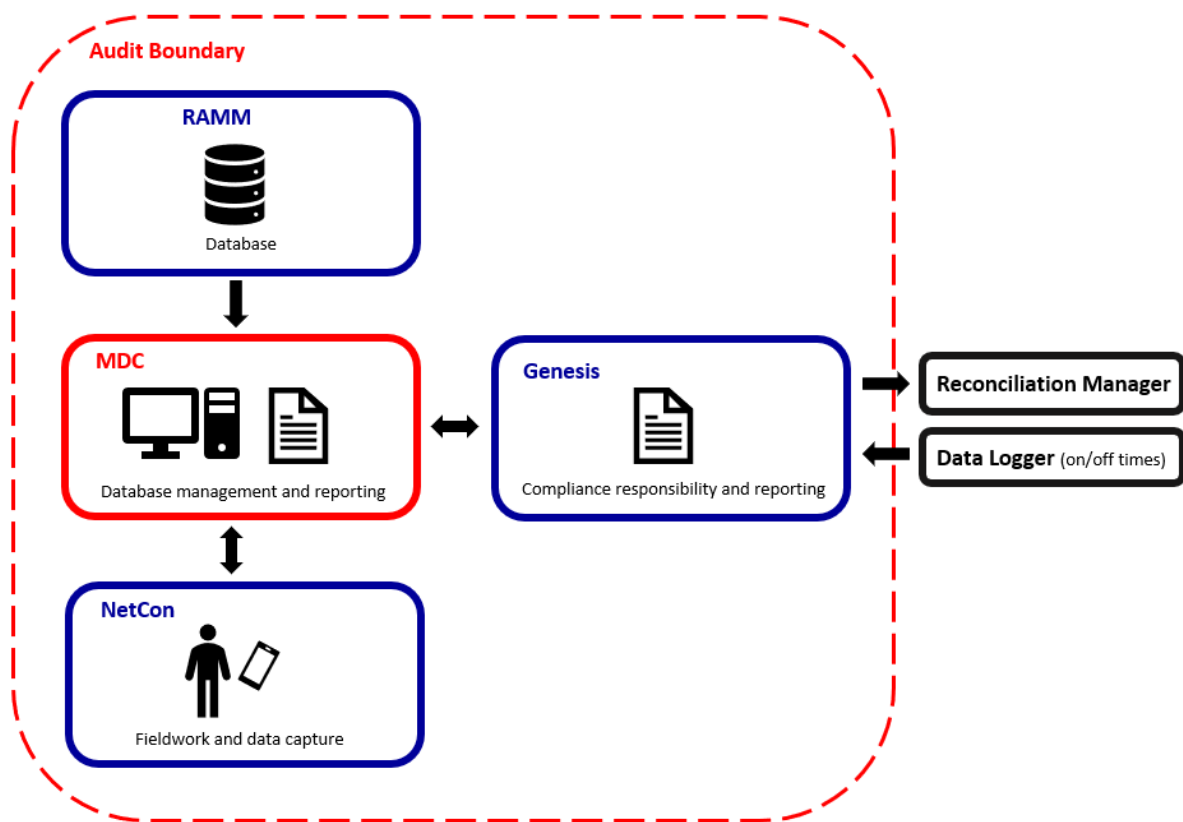
## 1.8. Scope of Audit

This audit of the Mackenzie District Council (MDC) DUMML 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 DUMML audits version 1.1.

The database is remotely hosted by thinkproject New Zealand Ltd and is managed by MDC, who is Genesis's customer. The fieldwork is conducted by NetCon, paperwork is returned to MDC.

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 147 items of load on 17 September 2022.

## 1.9. Summary of previous audit

The previous audit was completed in April 2022 by Rebecca Elliot of Veritek Limited. Five non-compliances were identified. The status of the non-compliances are described below.

**Table of Non-compliances**

Subject	Section	Clause	Non-compliance	Status
Deriving submission information	2.1	11(1) of Schedule 15.3	<p>Variance in light volumes submitted by Genesis vs what is recorded in the spreadsheet maintained by MDC, is likely to be resulting in an estimated over submission of 84,060 kWh per annum.</p> <p>Nine items of load do not have an ICP number recorded resulting in an estimated minor under submission of 1,691 kWh per annum.</p> <p>In absolute terms, total annual consumption is estimated to be 26,700 kWh higher than the DUML database indicates.</p> <p>Monthly reporting is not being provided to Genesis, submission is based on a historical snapshot and does not consider changes or adjustments.</p>	<p>Cleared, revisions still required</p> <p>Still existing</p> <p>Cleared</p> <p>Still existing</p>
ICP identifier and items of load	2.2	Clause 11(2)(a) and (aa) of Schedule 15.3	Nine items do not have an ICP number recorded resulting in an estimated under submission of 1,691 kWh per annum.	Still existing
All load recorded in the database	2.5	Clauses 11(2A) of Schedule 15.3	Nine additional lamps identified in the field of 157 items of load sampled (6% error rate).	Still existing for different lamps
Database accuracy	3.1	15.2 and 15.37B(b)	<p>In absolute terms, total annual consumption is estimated to be 26,700 kWh higher than the DUML database indicates.</p> <p>Nine items of load do not have an ICP number recorded resulting in an estimated under submission of 1,691 kWh per annum.</p>	<p>Cleared</p> <p>Still existing</p>

Subject	Section	Clause	Non-compliance	Status
Volume information accuracy	3.2	15.2 and 15.37B(c)	<p>Variance in light volumes submitted by Genesis vs what is recorded in the spreadsheet maintained by MDC, is likely to be resulting in an estimated 84,060 kWh per annum of over submission.</p> <p>Nine items of load do not have an ICP number recorded resulting in an estimated minor under submission of 1,691 kWh per annum.</p> <p>In absolute terms, total annual consumption is estimated to be 26,700 kWh higher than the DUML database indicates.</p> <p>Monthly reporting is not being provided to Genesis, submission is based on a historical snapshot and does not consider changes or adjustments.</p>	<p>Cleared, revisions still required</p> <p>Still existing</p> <p>Cleared</p> <p>Still existing</p>

#### 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 as NHH using the SST profile, and on hours are derived using data logger information for all five ICP's.

The total volume submitted to the Reconciliation Manager is based on a monthly database report derived from the Mackenzie RAMM database and the "burn time" which is sourced from data loggers. The methodology is compliant.

I checked the submission data for August 2022 for the five ICPs associated with the MDC database using the value submitted by Genesis and the database information and confirmed the calculation for August 2022 was correct.

MDC have provided Genesis with one monthly report since the last audit with an expectation that Genesis would use the same data unless notified of changes. Genesis have requested MDC to provide a notification each month to confirm if there has not been any change, if there has been a change MDC will provide an updated database extract and also identify the changes.

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 detailed in the previous audits, nine items of load had an invalid ICP number recorded, currently they do not have an ICP recorded which means they are not being reconciled. This is resulting in an estimated under submission of 1,691 kWh per annum.

The previous audit identified a difference between the submission values and the database extract provided for the audit. This was due to no provision of an up to date data extract having been provided. A new database extract was provided for August 2022 and was used to calculate submission. I checked the August 2022 submission and found that it matched. Genesis has not carried out revisions using the updated data resulting an estimated over submission of 63,045 kWh from November 2021 to July 2022. This is recorded as a non-compliance. They intend to carry out revisions to correct this for the remaining available revisions.

On 18 June 2019, the Electricity Authority issued a memo confirming that the code requirement to calculate the correct monthly load must:

- take into account when each item of load was physically installed or removed, and
- wash up volumes must take into account where historical corrections have been made to the DUML load and volumes.

Monthly reporting is not being provided to Genesis by MDC.

**Audit outcome**

Non-compliant

Non-compliance	Description		
<p>Audit Ref: 2.1 With: Clause 11(1) of Schedule 15.3</p> <p>From: 26-Mar-22 To: 14-Sep-22</p>	<p>Revisions have not been made from November 2021 to July 2022 resulting in an estimated over submission of 63,045 kWh.</p> <p>Nine items of load do not have an ICP number recorded resulting in an estimated minor under submission of 1,691 kWh per annum.</p> <p>Monthly reporting is not being provided to Genesis, submission is based on a historical snapshot and does not consider changes or adjustments.</p> <p>Potential impact: High Actual impact: High Audit history: Once Controls: Moderate Breach risk rating: 6</p>		
Audit risk rating	Rationale for audit risk rating		
<p><b>High</b></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 impact is assessed to be high due to the impact on submission.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>Genesis has reviewed the dataset provided by MDC and has reported exceptions back to MDC. Genesis will complete revisions as required once dataset has been provided and exceptions cleared. Genesis has been advised that the roading manager at the council has left and there might get Fulton Hogan to look into this.</p> <p>MDC has been notified of the asset discrepancies. Genesis has been advised that the roading manager at the council has left. Genesis will discuss the discrepancies again once they have found new resource.</p> <p>Genesis has been sending reminders to the council that data needs to be provided on monthly basis.</p>		<p>01/02/2023</p>	<p>Investigating</p>
Preventative actions taken to ensure no further issues will occur		Completion date	
<p>Genesis continues to work with the council to increase accuracy level in their database.</p>		<p>01/02/2023</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 DUMML database must contain:

- each ICP identifier for which the retailer is responsible for the DUMML
- the items of load associated with the ICP identifier.

### Audit observation

The database was checked to confirm whether an ICP is recorded for each item of load.

### Audit commentary

The analysis found that all items of load, except for nine items had an ICP number recorded, which means they are not all being reconciled. This will be resulting in an estimated minor under submission of 1,691 kWh per annum. This was also identified in the last audit.

### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 2.2 With: Clause 11(2)(a) and (aa) of Schedule 15.3  From: 26-Mar-22 To: 14-Sep-22	Nine items do not have an ICP number recorded resulting in an estimated under submission of 1,691 kWh per annum.  Potential impact: Low  Actual impact: Low  Audit history: Once  Controls: Moderate  Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	The controls are recorded as moderate because they mitigate risk most of the time but there is room for improvement.  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
MDC has been notified of the asset discrepancies. Genesis has been advised that the roading manager at the council has left. Genesis will discuss the discrepancies again once they have found new resource.		01/02/2023	Investigating
Preventative actions taken to ensure no further issues will occur		Completion date	
Genesis continues to work with the council to increase accuracy level in their database.		01/02/2023	

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

#### Code reference

*Clause 11(2)(b) of Schedule 15.3*

#### Code related audit information

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

#### Audit observation

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

#### Audit commentary

All items except for one item of load have a street address recorded, all have GPS coordinates recorded and the items of load are locatable.

#### Audit outcome

Compliant

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

#### Code reference

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

#### Code related audit information

*The DUMML database must contain:*

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

#### Audit observation

The database was checked to confirm that it contained a field for lamp type and wattage capacity and included any ballast or gear wattage and that all items of load were recorded.

#### Audit commentary

All items of load have a lamp model, lamp wattage and gear wattage populated. The accuracy of these are discussed in **section 3.1**.

#### Audit outcome

Compliant

### 2.5. All load recorded in database (Clause 11(2A) of Schedule 15.3)

#### Code reference

*Clause 11(2A) of Schedule 15.3*

#### Code related audit information

*The retailer must ensure that each item of DUMML for which it is responsible is recorded in this database.*

#### Audit observation

The field audit was undertaken of a statistical sample of 147 items of load on 17 September 2022.

### Audit commentary

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

Address	Database Count	Field Count	Count differences	Wattage differences	Comments
OSTLER ROAD	20	20		1	1 x 22W LED recorded in the database but 1 x 17W LED located in the field
GLENCAIRN CRESCENT	12	12		1	1 x 22 W LED recorded in the database but 1 x 17W LED located in the field
LAKELAND AVENUE	11	16	+5	11	11 x 22W LED recorded in the database but 11 x 21W LED located in the field.  5 additional 21W LED not recorded in the database but located in the field
GRAY STREET	7	7		1	1 x 22 W LED recorded in the database but 150 HPS located in the field
<b>Total</b>	<b>1122</b>	<b>1127</b>	<b>+5</b>	<b>14</b>	

The field audit found five additional lamps that were missing from the database, and this is recorded as non-compliance below. The database accuracy is discussed in **section 3.1**.

### Audit outcome

Non-compliant



Non-compliance	Description		
Audit Ref: 2.5 With: Clauses 11(2A) of Schedule 15.3 From: 26-Mar-22 To: 14-Sep-22	Five additional lamps identified in the field of 147 items of load sampled. Potential impact: Low Actual impact: Low Audit history: Twice Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	The controls are rated as moderate as the processes in place will ensure that the data is recorded correctly most of the time. The impact is assessed to be low due to the small number of additional lights found in the field in relation to the overall count of the items of load.		
Actions taken to resolve the issue		Completion date	Remedial action status
Genesis has brought auditors findings to council's attention regarding the 5 additional lamps and council have advised they will investigate it.		01/02/2023	Investigating
Preventative actions taken to ensure no further issues will occur		Completion date	
Genesis will continue to work with the council and send them reminder to have the database updated		01/02/2023	

## 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 RAMM database functionality achieves compliance with the code.

### Audit outcome

Compliant

## 2.7. Audit trail (Clause 11(4) of Schedule 15.3)

### Code reference

*Clause 11(4) of Schedule 15.3*

### **Code related audit information**

*The DUML database must incorporate an audit trail of all additions and changes that identify:*

- *the before and after values for changes*
- *the date and time of the change or addition*
- *the person who made the addition or change to the database*

### **Audit observation**

The database was checked for audit trails.

### **Audit commentary**

RAMM records audit trail information of changes made.

### **Audit outcome**

Compliant

### 3. ACCURACY OF DUML DATABASE

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

##### Code reference

Clause 15.2 and 15.37B(b)

##### Code related audit information

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

##### Audit observation

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

Plan Item	Comments
Area of interest	Mackenzie DC region
Strata	The database contains 1,131 items of load in the Mackenzie region. The processes for the management of all items of load are the same, and strata were created for each of the three ICPs.
Area units	I created a pivot table of the roads in each stratum and used a random number generator in a spreadsheet to select a total of 16 sub-units making up approximately 10% of the entire database wattage.
Total items of load	147 items of load were checked.

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

##### Audit commentary

##### Database accuracy based on the field audit

A field audit was conducted of a statistical sample of 147 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	100.1	Wattage from survey is higher than the database wattage by 0.1%.
R <sub>L</sub>	97.9	With a 95% level of confidence, it can be concluded that the error could be between 2.1% lower and 1.1% higher than the database.
R <sub>H</sub>	101.1	

These results were categorised in accordance with the “Distributed Unmetered Load Statistical Sampling Audit Guideline”, effective from 1 February 2019. The table below shows that Scenario A (detailed below) applies, and the best available estimate indicates that the database is accurate within  $\pm 5.0\%$ .

There is a 95% level of confidence that the installed capacity is up to 1 kW lower than the database.

In absolute terms, total annual consumption is estimated to be 2,000 kWh higher than the DUML database indicates.

There is a 95% level of confidence that the annual consumption is between 3,800 kWh lower p.a. to 2,000 kWh p.a. higher than the database indicates.

Scenario	Description
<b>A - Good accuracy, good precision</b>	This scenario applies if: (a) $R_H$ is less than 1.05; and (b) $R_L$ is greater than 0.95 The conclusion from this scenario is that: (a) the best available estimate indicates that the database is accurate within +/- 5 %; and (b) this is the best outcome.
<b>B - Poor accuracy, demonstrated with statistical significance</b>	This scenario applies if: (a) the point estimate of R is less than 0.95 or greater than 1.05 (b) as a result, either $R_L$ is less than 0.95 or $R_H$ is greater than 1.05. There is evidence to support this finding. In statistical terms, the inaccuracy is statistically significant at the 95% level.
<b>C - Poor precision</b>	This scenario applies if: (a) the point estimate of R is between 0.95 and 1.05 (b) $R_L$ is less than 0.95 and/or $R_H$ is greater than 1.05 The conclusion from this scenario is that the best available estimate is not precise enough to conclude that the database is accurate within +/- 5 %.

**Lamp description and capacity accuracy**

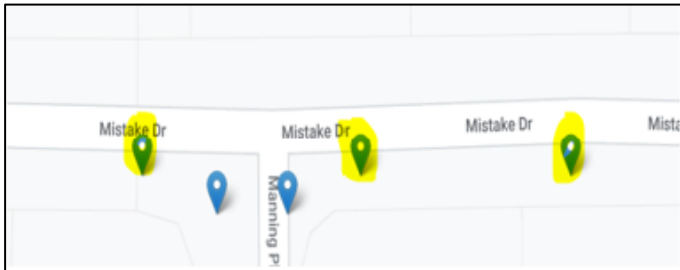
As discussed in **section 2.4**, all items of load have a gear model, light model, light wattage and gear wattage recorded, and no items have invalid zero lamp or gear wattages.

The database was checked against the published standardised wattage table, and manufacturer’s specifications where available. No lamp or gear wattage inaccuracies were identified.

**Location accuracy**

The field audit identified three lamps recorded in the database as Manning Place, however when mapped using the co-ordinates these lamps are on located Mistake Drive. The co-ordinates are accurate, and the lamps can be easily located, the street name should be updated to match this.

These are highlighted below:



### ICP number accuracy

As detailed in **section 2.2** and reported previously, nine items of load do not have an ICP populated. This will be resulting in an estimated under submission of 1,691 kWh per annum. This is recorded as non-compliance below.

### Change management process findings

New connection, fault and maintenance work is completed by NetCon.

Service Requests and Purchase orders are issued to NetCon to complete fieldwork. Paperwork is returned to MDC who update the changes in a spreadsheet that is currently being maintained and will be loaded into RAMM.

All private lights in the MDC area are metered, and no festive lights are used.

Outage patrols are completed monthly by NetCon.

### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 3.1 With: Clause 15.2 and 15.37B(b)  From: 26-Mar-22 To: 14-Sep-22	<p>Nine items of load do not have an ICP number recorded resulting in an estimated under submission of 1,691 kWh per annum.</p> <p>Potential impact: High</p> <p>Actual impact: Medium</p> <p>Audit history: Once</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	<p>The controls are recorded as moderate because they mitigate risk most of the time but there is room for improvement.</p> <p>The impact on settlement and participants is minor; therefore, the audit risk rating is low.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
MDC has been notified of the asset discrepancies. Genesis has been advised that the roading manager at the council has left. Genesis will discuss the discrepancies again once they have found new resource.		01/02/2023	Investigating
Preventative actions taken to ensure no further issues will occur		Completion date	
Genesis continues to work with the council to increase accuracy level in their database.		01/02/2023	

### 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 as NHH using the SST profile, and on hours are derived using data logger information for all five ICP's.

The total volume submitted to the Reconciliation Manager is based on a monthly database report derived from the Mackenzie RAMM database and the "burn time" which is sourced from data loggers. The methodology is compliant.

I checked the submission data for August 2022 for the five ICPs associated with the MDC database using the value submitted by Genesis and the database information and confirmed the calculation for August 2022 was correct.

MDC have provided Genesis with one monthly report since the last audit with an expectation that Genesis would use the same data unless notified of changes. Genesis have requested MDC to provide a notification each month to confirm if there has not been any change, if there has been a change MDC will provide an updated database extract and also identify the changes.

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 detailed in the previous audits, nine items of load had an invalid ICP number recorded, currently they do not have an ICP recorded which means they are not being reconciled. This is resulting in an estimated under submission of 1,691 kWh per annum.

The previous audit identified a difference between the submission values and the database extract provided for the audit. This was due to no provision of an up to date data extract having been provided. A new database extract was provided for August 2022 and was used to calculate submission. I checked the August 2022 submission and found that it matched. Genesis has not carried out revisions using the updated data resulting an estimated over submission of 63,045 kWh from November 2021 to July 2022. This is recorded as a non-compliance. They intend to carry out revisions to correct this for the remaining available revisions.

On 18 June 2019, the Electricity Authority issued a memo confirming that the code requirement to calculate the correct monthly load must:

- take into account when each item of load was physically installed or removed, and
- wash up volumes must take into account where historical corrections have been made to the DUML load and volumes.

Monthly reporting is not being provided to Genesis by MDC.

**Audit outcome**

Non-compliant

Non-compliance	Description		
<p>Audit Ref: 3.2 With: Clauses 15.2 and 15.37B(c)  From: 26-Mar-22 To: 14-Sep-22</p>	<p>Revisions have not been made from November 2021 to July 2022 resulting in an estimated over submission of 63,045 kWh.</p> <p>Nine items of load do not have an ICP number recorded resulting in an estimated minor under submission of 1,691 kWh per annum.</p> <p>Monthly reporting is not being provided to Genesis, submission is based on a historical snapshot and does not consider changes or adjustments.</p> <p>Potential impact: High Actual impact: High Audit history: Once Controls: Moderate Breach risk rating: 6</p>		
Audit risk rating	Rationale for audit risk rating		
<p><b>High</b></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 impact is assessed to be high due to the impact on submission.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>Genesis has reviewed the dataset provided by MDC and has reported exceptions back to MDC. Genesis will complete revisions as required once dataset has been provided and exceptions cleared. Genesis has been advised that the roading manager at the council has left and there might get Fulton Hogan to look into this</p> <p>MDC has been notified of the asset discrepancies. Genesis has been advised that the roading manager at the council has left. Genesis will discuss the discrepancies again once they have found new resource.</p> <p>Genesis has been sending reminders to the council that data needs to be provided on monthly basis.</p>		<p>01/02/2023</p>	<p>Investigating</p>
Preventative actions taken to ensure no further issues will occur		Completion date	
<p>Genesis continues to work with the council to increase accuracy level in their database.</p>		<p>01/02/2023</p>	

## CONCLUSION

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

The database is remotely hosted by thinkproject New Zealand Ltd and is managed by MDC, who is Genesis' customer. The fieldwork is conducted by NetCon.

The field audit was undertaken of a statistical sample of 147 items of load on 17 September 2022. This found the database is confirmed to be accurate within the allowable  $\pm 5\%$  accuracy threshold.

Service Requests and Purchase orders are issued to NetCon to complete fieldwork, the paperwork is returned to MDC who update the changes in a spreadsheet.

Genesis reconciles this DUML load using the SST profile. I checked the submission data for August 2022 for the five ICPs associated with the MDC database using the value submitted by Genesis and the database information and confirmed the calculation for August 2022 was correct.

The previous audit identified a difference between the submission values and the database extract provided for the audit. This was due to no provision of an up to date data extract having been provided. A new database extract was provided August 2022 and is now being used to calculate submission. I checked the August 2022 submission and found that it matched. Genesis has not carried out revisions using the updated data resulting an estimated over submission of 63,045 kWh from November 2021 to July 2022. This is recorded as a non-compliance. They intend to carry out revisions to correct this for the remaining available revisions.

The audit found five non-compliances and makes no recommendations. The future risk rating of 18 indicates that the next audit be completed in six months. I have considered this in conjunction with Genesis' comments and recommend that the next audit be in six months.



## PARTICIPANT RESPONSE

Genesis has been advised that the Roding Manager at MDC has left. Genesis has reported exceptions from the database to MDC and will complete revisions as required once a response has been provided and exceptions cleared. Genesis will continue to work with the council to improve database accuracy and clear the discrepancies identified. Genesis will also continue to send reminders to the council that data needs to be provided on monthly basis.