

ELECTRICITY INDUSTRY PARTICIPATION CODE  
DISTRIBUTED UNMETERED LOAD AUDIT REPORT

VERITEK

For

GISBORNE DISTRICT COUNCIL AND  
GENESIS ENERGY  
NZBN 9429037706609

Prepared by: Rebecca Elliot

Date audit commenced: 9 July 2021

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Audit report due date: 01-Sep-21

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## EXECUTIVE SUMMARY

This audit of the **Gisborne District Council (GDC)** Unmetered Streetlights 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.

This database switched from Meridian to Genesis on 1 July 2021.

The GDC RAMM database has replaced the Eastland Access database from July 2021 and is being used for reconciliation. The GDC RAMM database includes the parks and amenity lighting. The number of ICPs associated with this database has been consolidated from the 119 to four ICPs. The NZTA lights are being reconciled in the NZTA database and are therefore no longer included in the GDC database.

The database accuracy was confirmed to be within the allowable +/-5% threshold.

The database extract provided for the field audit was compared to the database extract provided to Genesis for August 2021 and found that the extract used for submission had 247 lights less than the database supplied for the field audit. Genesis is investigating this.

As the database used has changed during the audit period, a field audit was required to assess the database accuracy. Due to the COVID 19 pandemic, travel for this audit had to be delayed causing this audit to be completed after it's due date. As this was unavoidable, I have not recorded non-compliance for the late submission of this audit report.

The audit found four non-compliances and no recommendations are made. The future risk rating of eight indicates that the next audit be completed in 18 months. This is an excellent improvement from the last audit's findings and reflects the improvements gained by the 100% field audit that has been undertaken and the use of the council's RAMM database for submission. I have considered this in conjunction with Genesis' comments and 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	247 lights excluded from the monthly report provided to Genesis for submission.  The data used for submission does not track changes at a daily basis and is provided as a snapshot.	Moderate	Low	2	Investigating
All load recorded in database	2.5	11(2A) of Schedule 15.3	247 lights excluded from the monthly report provided to Genesis for submission.	Moderate	Low	2	Identified
Database accuracy	3.1	15.2 and 15.37B(b)	247 lights excluded from the monthly report provided to Genesis for submission (including 39 private lights).	Moderate	Low	2	Investigating
Volume information accuracy	3.2	15.2 and 15.37B(c)	247 lights excluded from the monthly report provided to Genesis for submission.  The data used for submission does not track changes at a daily basis and is provided as a snapshot.	Moderate	Low	2	Investigating
<b>Future Risk Rating</b>						<b>8</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	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

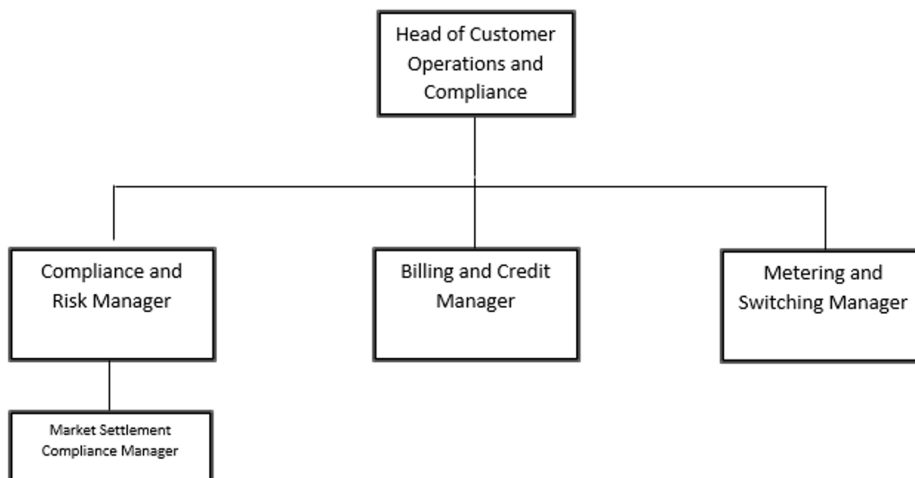
Section 11 of the Electricity Industry Act provides for the Electricity Authority to exempt any participant from compliance with all or any of the clauses.

#### Audit commentary

Genesis confirms that 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:

Name	Title	Company
Rebecca Elliot	Electricity Authority Approved Auditor	Veritek Limited

Other personnel assisting in this audit were:

Name	Title	Company
Andrew Haughey	Senior Procurement Advisor	Gisborne DC
Tina Middlemiss	Asset Planning Manager, Community Lifelines	Gisborne DC
Sarah Grant	Asset Planning Manager, Community Lifelines	Gisborne DC
Craig Young	Rubiks Business Service Owner – Market Settlements and interactions	Genesis
Julia Jones	Technical Specialist – Reconciliations Compliance	Genesis

### 1.4. Hardware and Software

The database used for reporting this DUML load will be RAMM from 1 June 2021. The SQL database used for the management of DUML is remotely hosted by thinkproject New Zealand Limited (formerly RAMM NZ Ltd). The specific module used for DUML is called “SLIMM” which stands for “Streetlighting Inventory Maintenance Management”.

The database is cloud based and its back-up is in accordance with standard industry procedures. Access to the database is secure by way of password protection.

Systems used by the trader and their agent 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

The number of ICPs associated with the GDCs DUML have been consolidated from 119 ICPs to four ICPs. The NZTA lights in the Gisborne area are being reconciled by NZTA using the NZTA RAMM database and are therefore no longer part of the scope of this audit.

ICP Number	Description	NSP	Profile	Number of items of load	Database wattage (watts)
0000740069EN998	Unmetered Decorative lights	TUI1101	NST	17	1,504
0000740115EN6DF	Unmetered Pay and Display	TUI1101	NST	24	480
0000740501EN179	Unmetered Camera's	TUI1101	NST	8	160
0000740503EN1FC	Unmetered Streetlight Connections	TUI1101	NST	3,697	269,720
TOTAL				3,746	271,864

The redundant ICPs are expected to be decommissioned. They are set at status "1,5- inactive - reconciled elsewhere" until Eastland are ready to decommission them.

A full field audit has been completed and the findings from this have been loaded to the GDC RAMM database. This includes the parks and amenity lights which were previously excluded from the Eastland database.

The number of lights in the database extract used for the field compared to the number provided in the monthly reporting to Genesis is discussed in **sections 2.1, 2.5, 3.1 and 3.2**.

## 1.7. Authorisation Received

All information was provided directly by GDC and Genesis.

## 1.8. Scope of Audit

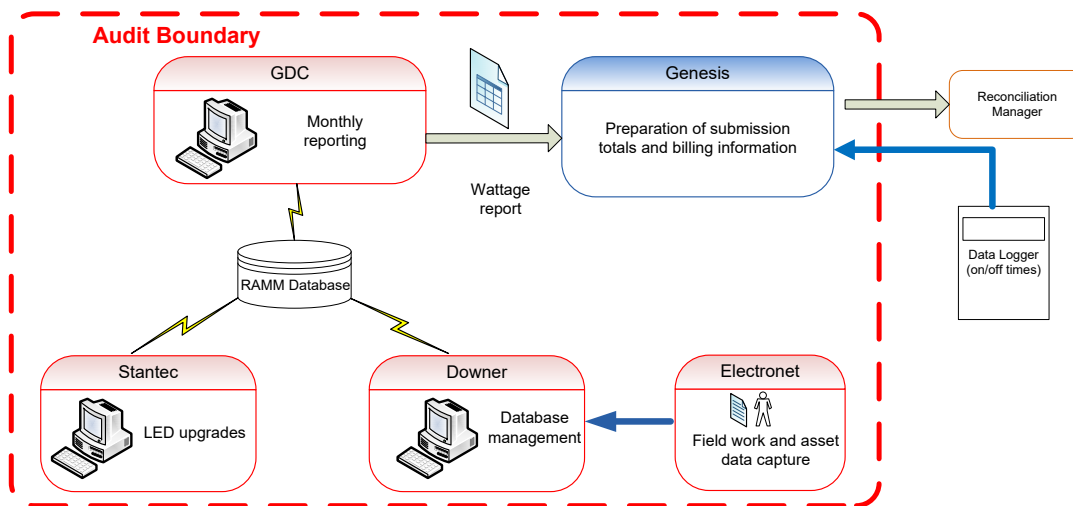
This audit of the GDC RAMM DUML database and processes was conducted at the request of Genesis, in accordance with clause 15.37B. The purpose of this audit is to verify that the volume information is being calculated accurately, and that profiles have been correctly applied.

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

Previously the Eastland Streetlight Access database managed by Eastland was used to reconcile this load. The GDC RAMM database is now used for reconciliation from July 2021. GDC provide a monthly report to Genesis. The on/off times are derived by a data logger interrogated by EMS. The NZTA lights previously associated with these lights are now reconciled by NZTA and will be subject to a separate audit.

The diagram below shows the audit boundary for clarity.





The field audit was carried out of 221 items of load on October 7<sup>th</sup>, 2021.

### 1.9. Summary of previous audit

The previous audit was conducted for Meridian by Rebeca Elliot of Veritek Limited in August 2020. That audit found five non-compliances and made one recommendation. The table below details the status of those findings.

### Table of Non-Compliance

Subject	Section	Clause	Non-compliance	Status
Deriving submission information	2.1	11(1) of Schedule 15.3	<p>Parks and amenity lighting and under verandah and decorative lighting not recorded in the database and are not being reconciled.</p> <p>Database is not confirmed as accurate with a 95% level of confidence resulting in an estimated over submission of 17,900 kWh per annum.</p> <p>Estimated under submission of 5,093.73 per annum due to incorrect wattages and ballasts applied.</p> <p>The data used for submission does not track changes at a daily basis and is provided as a snapshot.</p>	Still existing for different issue.
Description and capacity	2.4	11(2)(c) of Schedule 15.3	Gear wattage is not recorded in the database.	Cleared
All load recorded in database	2.5	11(2A) of Schedule 15.3	<p>Parks and amenity lighting and under verandah and decorative lighting not recorded in the database and are not being reconciled.</p> <p>11 additional lights were identified in the field audit.</p>	Still existing for different issue.

Subject	Section	Clause	Non-compliance	Status
Database accuracy	3.1	15.2 and 15.37B(b)	<p>Parks and amenity lighting and under verandah and decorative lighting not recorded in the database and are not being reconciled.</p> <p>Database is not confirmed as accurate with a 95% level of confidence resulting in an estimated over submission of 17,900 kWh per annum.</p> <p>Estimated under submission of 5,093.73 per annum due to incorrect wattages and ballasts applied.</p>	Still existing for different issue.
Volume information accuracy	3.2	15.2 and 15.37B(c)	<p>Parks and amenity lighting and under verandah and decorative lighting not recorded in the database and are not being reconciled.</p> <p>Database is not confirmed as accurate with a 95% level of confidence resulting in an estimated over submission of 17,900 kWh per annum.</p> <p>Estimated under submission of 5,093.73 per annum due to incorrect wattages and ballasts applied.</p> <p>The data used for submission does not track changes at a daily basis and is provided as a snapshot.</p>	Still existing for different issue.

## Table of Recommendations

Subject	Section	Recommendation	Status
Deriving submission accuracy	2.1	100% field audit be undertaken to capture the unmetered park and amenity lighting, under verandah lights and decorative lights in the central city (Gladstone Road and surrounds).	Adopted

### 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 has requested Veritek to undertake this streetlight audit.

**Audit commentary**

As the database used has changed during the audit period, a field audit was required to assess the database accuracy. Due to the COVID 19 pandemic travel for this audit had to be delayed causing this audit to be completed after it's due date. As this was unavoidable, I have not recorded non-compliance for the late submission of this audit report.

**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 NST profile. The total volume submitted to the Reconciliation Manager is based on a monthly database report provided by GDC from RAMM. The “burn time” is sourced from data loggers. The number of ICPs associated with the GDCs DUML have been consolidated from 119 ICPs to four ICPs. The NZTA lights in the Gisborne area are being reconciled by NZTA using the NZTA RAMM database and are therefore no longer part of the scope of this audit. I checked the submission for August 2021 and confirmed that the calculations were correct.

The previous audit noted that not all parks and amenity lighting and the under verandah lights and decorative LED lights in the central city were recorded in the Eastland database. GDC have undertaken 100% field audit and these items of load are now included in the RAMM database.

The database extract provided for the field audit was compared to the database extract provided to Genesis for August 2021 and found that the extract used for submission had 247 lights less than the database supplied for the field audit. I did a comparison by light owner in each extract, as the extract provided for the field audit was prior to ICP consolidation:

Light owner	RAMM database extract provided for field audit	RAMM database extract provided for August 2021 submission	Difference by light owner
Private	39	-	39
Council Amenity & Access way	42	39	3
Council Car Parks	56	70	-14
Council Properties	9	9	0
Council Rooding	3552	3447	105
Parks & Reserves	183	173	10
<b>TOTAL DIFFERENCE</b>			<b>208</b>

Genesis is working with GDC to investigate this.

The field audit against the database quantities found that the database is confirmed as accurate with a 95% level of confidence. This is detailed in **section 3.1**.

Submission is based on a snapshot of the database at the end of the month and does not consider historic adjustments. Genesis is working with GDC to provide monthly reporting that will take these into account, so this is expected to be resolved.

**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: 26-Nov-19</p> <p>To: 31-Aug-20</p>	<p>247 lights excluded from the monthly report provided to Genesis for submission.</p> <p>The data used for submission does not track changes at a daily basis and is provided as a snapshot.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Three times previously</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>		
Audit risk rating	Rationale for audit risk rating		
<p><b>Low</b></p>	<p>The controls are rated as moderate as the GDC RAMM database is now being used for reconciliation and the processes in place to manage are robust. The difference in light volumes is being investigated and once resolved controls would be expected to be recorded as strong.</p> <p>The impact is assessed to be low as the number of lights missing from the monthly wattage report is small.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>Genesis have raised the issue of missing lights with the council who have advised that these lights are metered. Going forward they will update their data base with the metered ICP.</p> <p>The council is currently reviewing the tracking of change requirement and will work with Genesis to capture monthly asset changes</p>		<p>01/02/2022</p> <p>01/03/2022</p>	<p>Investigating</p>
Preventative actions taken to ensure no further issues will occur		Completion date	
<p>Genesis unfortunately are unable to aid on missing assets as the council provide monthly updates based on what is in the RAMM data base. Council has been made aware of the discrepancy.</p> <p>Genesis will continue to work alongside the GDC to raise the accuracy level of their database.</p>		<p>Continuous improvement</p>	

## 2.2. ICP identifier and items of load (Clause 11(2)(a) and (aa) of Schedule 15.3)

### Code reference

*Clause 11(2)(a) and (aa) of Schedule 15.3*

### Code related audit information

*The DUML database must contain:*

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

### Audit observation

The database was checked to confirm that an ICP was recorded against each item of load.

### Audit commentary

All items of load had an ICP recorded.

### 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 a road or park name for all items of load. GPS co-ordinates are recorded for all but five items of load. These five items have the metres from the end of the street confirming that all 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 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, lamp mode and lamp wattage are included in the database. I examined the database and found all items of load had a wattage value and the correct ballasts have been applied where expected.

The last audit recorded that the gear wattages were added to the Eastland Access database. This database is no longer being used for submission. The RAMM database includes these details in the database, therefore this issue is resolved.

The overall accuracy of lamp descriptions, wattages and ballasts is recorded in **section 3.1**.

### Audit outcome

Compliant

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

### Code reference

*Clause 11(2A) of Schedule 15.3*

### Code related audit information

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

### Audit observation

The field audit was undertaken of 221 lights using the statistical sampling methodology.

### Audit commentary

The field audit discrepancy findings are detailed in the table below:

Street/Area	Database Count	Field Count	Lamp no. difference	No of incorrect lamp wattage	Comments
BIGGS STREET	6	6	-	1	1 x 27W LED recorded as 70W HPS
HALL STREET (WHATAUPOKO)	6	6	-	1	1 x 116W LED (assumed - no markings) recorded as 150W HPS
VOGEL STREET	4	4	-	2	2 x 116W LED recorded as 24W LED
<b>GRAND TOTAL</b>	<b>221</b>	<b>221</b>	<b>-</b>	<b>4</b>	

This clause relates to lights in the field not recorded in the database. No additional lights were identified in the field.

The previous audit noted that not all parks and amenity lighting, under veranda lights and decorative LED lights in the central city were recorded in the Eastland database. A 100% field audit has been completed and these lights are now included in the GDC RAMM database.

As detailed in **section 2.1**, the database extract provided for the field audit was compared to the database extract provided to Genesis for August 2021 and found that the extract used for submission had 247 lights less than the database supplied for the field audit. Genesis is investigating this.

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: 26-Nov-19 To: 31-Aug-20	247 lights excluded from the monthly report provided to Genesis for submission.  Potential impact: Low Actual impact: Low Audit history: Once previously Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	The controls are rated as moderate as the GDC RAMM database is now being used for reconciliation and the processes in place to manage are robust. The difference in light volumes is being investigated and once resolved controls would be expected to be recorded as strong.  The impact is assessed to be low as the number of lights missing from the monthly wattage report is small.		
Actions taken to resolve the issue		Completion date	Remedial action status
Genesis have raised the issue of missing lights with the council who have advised that these lights are metered. Going forward they will update their data base with the metered ICP.		01/02/2022	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Genesis unfortunately are unable to aid on missing assets as the council provide monthly updates based on what is in the RAMM data base. Council has been made aware of the discrepancy.  Genesis will continue to work alongside the GDC to raise the accuracy level of their database.		Continuous improvement	

## 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 ability of the database to track changes was assessed and the process for tracking of changes in the database was examined.

### Audit commentary

The 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

The database has a complete audit trail.

### 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	Gisborne District Council
Strata	The GDC RAMM database contains the items of unmetered load in the Gisborne District Council area.  The processes for the management of items of load are the same, but I decided to place the items of load into four strata, as follows:  Street name A-De, Street name Di-Jo, Street name Ju-P, and Street name Q-Y.
Area units	I created a pivot table of the ICP in each area and used a random number generator in a spreadsheet to select a total of 46 sub-units representing 5% of the total database load.
Total items of load	221 items of load were checked.

Wattages were checked for alignment with the published standardised wattage table produced by the Electricity Authority against the database or in the case of LED lights against the LED light specification.

The change management process and timeliness of database updates was evaluated.

##### Audit commentary

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

A field audit was conducted of a statistical sample of 221 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	100.7	Wattage from survey is higher than the database wattage by 0.7%
R <sub>L</sub>	98.9	With a 95% level of confidence, it can be concluded that the error could be between -2.1% and 4.8%
R <sub>H</sub>	104.8	

These results were categorised in accordance with the “Distributed Unmetered Load Statistical Sampling Audit Guideline”, effective from 1 February 2019 and the table below shows that Scenario A (detailed below) applies, and the database is confirmed to be accurate.

In absolute terms the installed capacity is estimated to be 2.0 kW higher than the database indicates.

There is a 95% level of confidence that the installed capacity is between 4.0 kW lower and 15.0 kW higher than the database.

In absolute terms, total annual consumption is estimated to be 9,100 kWh higher than the DUML database indicates.

There is a 95% level of confidence that the annual consumption is between 15,300 kWh p.a. lower to 66,100 kWh p.a. higher than the database indicates.

Scenario	Description
<p><b>A - Good accuracy, good precision</b></p>	<p>This scenario applies if:</p> <ul style="list-style-type: none"> <li>(a) <math>R_H</math> is less than 1.05; and</li> <li>(b) <math>R_L</math> is greater than 0.95</li> </ul> <p>The conclusion from this scenario is that:</p> <ul style="list-style-type: none"> <li>(a) the best available estimate indicates that the database is accurate within +/- 5 %; and</li> <li>(b) this is the best outcome.</li> </ul>
<p><b>B - Poor accuracy, demonstrated with statistical significance</b></p>	<p>This scenario applies if:</p> <ul style="list-style-type: none"> <li>(a) the point estimate of R is less than 0.95 or greater than 1.05</li> <li>(b) as a result, either <math>R_L</math> is less than 0.95 or <math>R_H</math> is greater than 1.05.</li> </ul> <p>There is evidence to support this finding. In statistical terms, the inaccuracy is statistically significant at the 95% level</p>
<p><b>C - Poor precision</b></p>	<p>This scenario applies if:</p> <ul style="list-style-type: none"> <li>(a) the point estimate of R is between 0.95 and 1.05</li> <li>(b) <math>R_L</math> is less than 0.95 and/or <math>R_H</math> is greater than 1.05</li> </ul> <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>

As detailed in **section 2.1**, there is an overall light count difference of 247 lights (including 39 private lights, discussed below) between the database extract provided for the field audit (this was prior to the ICPs being consolidated) and the extract provided for submission. Genesis is investigating this with GDC. This is recorded as non-compliance below.

### **Lamp description and capacity accuracy**

The issue recorded in the last audit of GDC of the gear wattages not being recorded in the Eastland database has been resolved with the move to use the GDC RAMM database for reconciliation.

The RAMM database was examined and found that all wattages and ballasts were correct.

### **NZTA lighting**

NZTA lighting is not included in the GDC RAMM database and is no longer included in the scope of this audit. These are being audited as part of an NZTA RAMM database for another trader.

### **ICP accuracy**

All items of load have an ICP identifier recorded in the extract provided to Genesis for submission.

### **Location accuracy**

The database contains fields for the street address and GPS coordinates for all but five items of load.

### **Private lights**

The database extract provided for the field audit included 39 private lights and these were previously included in the Eastland database and were being paid for by GDC, but these have been excluded from the August database extract provided to Genesis for submission. As detailed in **section 2.1**, Genesis is investigating this.

### **Festive lights**

Festive lights are used but these are connected to metered circuits so do not need to be considered as part of this audit.

### **Change management process findings**

All new streetlight circuits are required to be metered by the network.

The GDC RAMM database is being used for billing and reconciliation. Electronet provide updates to Downers who manage the RAMM database on behalf of GDC. Changes are made in the RAMM database based on the date the paperwork is processed and not the date the change has been made in the field. GDC are working with Downer to ensure that the date of the change occurring is recorded in the database. GDC produce a monthly wattage report and provide this to Genesis. The current database is provided as a snapshot, but Genesis is working with GDC to include changes made to the database at a daily level.

Outage patrols are carried out as part of the maintenance contract but as the LED rollout nears completion this requirement is expected to be reduced.

The LED roll out is still in progress and due to delays to LED light stocks it is expected to take a further two years. This project is being managed by NZ Streetlighting. As project phases are completed the as-builts are provided to GDC. They then pass them to Stantec to update RAMM. This is taking approximately two months from the date of the light change to it being updated in the database. The date of the light change is populated in RAMM. GDC are working to improve this. This is recorded as non-compliance as the changes are not being included in the Ri, R1 and possibly the R3 submissions.

### **Audit outcome**

Non-compliant

Non-compliance	Description		
<p>Audit Ref: 3.1 With: Clause 15.2 and 15.37B(b)</p> <p>From: 01-Sep-20 To: 31-Aug-20</p>	<p>247 lights excluded from the monthly report provided to Genesis for submission (including 39 private lights).</p> <p>LED roll out updates not provided within the month of them being actioned causing submission to be inaccurate for the Ri &amp; R1 and possibly the R3 submissions.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Multiple times</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 rated as moderate as the GDC RAMM database is now being used for reconciliation and the processes in place to manage are robust. The difference in light volumes is being investigated and once resolved controls would be expected to be recorded as strong.</p> <p>The impact is assessed to be low as the number of lights missing from the monthly wattage report is small.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>Genesis have raised the issue of missing lights with the council who have advised that these lights are metered. Going forward they will update their data base with the metered ICP.</p> <p>Regarding tracking of change requirements genesis will continue to work with GDC to capture this.</p>		01/02/2022	Investigating
Preventative actions taken to ensure no further issues will occur		Completion date	
<p>Genesis will continue to work alongside the GDC to raise the accuracy level of their database.</p>		Continuous improvement	

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

#### Code reference

Clause 15.2 and 15.37B(c)

#### Code related audit information

The audit must verify that:

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

### Audit observation

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

- checking the registry to confirm that 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 NST profile. The total volume submitted to the Reconciliation Manager is based on a monthly database report provided by GDC from RAMM. The “burn time” is sourced from data loggers. The number of ICPs associated with the GDCs DUML have been consolidated from 119 ICPs to four ICPs. The NZTA lights in the Gisborne area are being reconciled by NZTA using the NZTA RAMM database and are therefore no longer part of the scope of this audit. I checked the submission for August 2021 and confirmed that the calculations were correct.

The previous audit noted that not all parks and amenity lighting and the under verandah lights and decorative LED lights in the central city were recorded in the Eastland database. GDC have undertaken 100% field audit and these items of load are now included in the RAMM database.

The database extract provided for the field audit was compared to the database extract provided to Genesis for August 2021 and found that the extract used for submission had 247 lights less than the database supplied for the field audit. I did a comparison by light owner in each extract, as the extract provided for the field audit was prior to ICP consolidation:

Light owner	RAMM database extract provided for field audit	RAMM database extract provided for August 2021 submission	Difference by light owner
Private	39	-	39
Council Amenity & Access way	42	39	3
Council Car Parks	56	70	-14
Council Properties	9	9	0
Council Rooding	3552	3447	105
Parks & Reserves	183	173	10
<b>TOTAL DIFFERENCE</b>			<b>208</b>

Genesis is working with GDC to investigate this.

The field audit against the database quantities found that the database is confirmed as accurate with a 95% level of confidence. This is detailed in **section 3.1**.

Submission is based on a snapshot of the database at the end of the month and does not consider historic adjustments. Genesis is working with GDC to provide monthly reporting that will take these into account, so this is expected to be resolved.

## Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 3.2 With: Clause 15.2 and 15.37B(c)  From: 26-Nov-19 To: 31-Aug-20	247 lights excluded from the monthly report provided to Genesis for submission. The data used for submission 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: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	The controls are rated as moderate as the GDC RAMM database is now being used for reconciliation and the processes in place to manage are robust. The difference in light volumes is being investigated and once resolved controls would be expected to be recorded as strong.  The impact is assessed to be low as the number of lights missing from the monthly wattage report is small.		
Actions taken to resolve the issue		Completion date	Remedial action status
Genesis have raised the issue of missing lights with the council who have advised that these lights are metered. Going forward they will update their data base with the metered ICP.  Regarding tracking of change requirements genesis will continue to with GDC to capture this.		01/02/2022	Investigating
Preventative actions taken to ensure no further issues will occur		Completion date	



## CONCLUSION

This database switched from Meridian to Genesis on 1 July 2021.

The GDC RAMM database has replaced the Eastland Access database from July 2021 and is being used for reconciliation. The GDC RAMM database includes the parks and amenity lighting. The number of ICPs associated with this database has been consolidated from the 119 to four ICPs. The NZTA lights are being reconciled in the NZTA database and are therefore no longer included in the GDC database.

The database accuracy was confirmed to be within the allowable +/-5% threshold.

The database extract provided for the field audit was compared to the database extract provided to Genesis for August 2021 and found that the extract used for submission had 247 lights less than the database supplied for the field audit. Genesis is investigating this.

As the database used has changed during the audit period, a field audit was required to assess the database accuracy. Due to the COVID 19 pandemic travel for this audit had to be delayed causing this audit to be completed after it's due date. As this was unavoidable, I have not recorded non-compliance for the late submission of this audit report.

The audit found four non-compliances and no recommendations are made. The future risk rating of eight indicates that the next audit be completed in 18 months. This is an excellent improvement from the last audit's findings and reflects the improvements gained by the 100% field audit that has been undertaken and the use of the council's RAMM database for submission. I have considered this in conjunction with Genesis' comments and agree with this recommendation.

## PARTICIPANT RESPONSE

Genesis have raised the issue of missing lights with the council who have advised that these lights are metered. Going forward they will update their data base with the metered ICP.

Genesis will continue to work with GDC to improve their level accuracy within their data base.