

ELECTRICITY INDUSTRY PARTICIPATION CODE  
DISTRIBUTED UNMETERED LOAD AUDIT REPORT

VERITEK

For

WAIPA DISTRICT COUNCIL AND  
GENESIS ENERGY  
NZBN:9429037706609

Prepared by: Rebecca Elliot

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Audit report due date: 30-May-23

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## TABLE OF CONTENTS

Executive summary .....	3
Audit summary .....	4
Non-compliances .....	4
Recommendations .....	5
Issues 5	
1. Administrative .....	6
1.1. Exemptions from Obligations to Comply with Code .....	6
1.2. Structure of Organisation .....	6
1.3. Persons involved in this audit.....	7
1.4. Hardware and Software .....	7
1.5. Breaches or Breach Allegations.....	7
1.6. ICP Data .....	7
1.7. Authorisation Received .....	8
1.8. Scope of Audit .....	8
1.9. Summary of previous audit .....	9
1.10. Distributed unmetered load audits (Clause 16A.26 and 17.295F) .....	10
2. DUML database requirements.....	11
2.1. Deriving submission information (Clause 11(1) of Schedule 15.3) .....	11
2.2. ICP identifier and items of load (Clause 11(2)(a) and (aa) of Schedule 15.3) .....	12
2.3. Location of each item of load (Clause 11(2)(b) of Schedule 15.3) .....	13
2.4. Description and capacity of load (Clause 11(2)(c) and (d) of Schedule 15.3) .....	13
2.5. All load recorded in database (Clause 11(2A) of Schedule 15.3) .....	14
2.6. Tracking of load changes (Clause 11(3) of Schedule 15.3) .....	15
2.7. Audit trail (Clause 11(4) of Schedule 15.3).....	16
3. Accuracy of DUML database .....	17
3.1. Database accuracy (Clause 15.2 and 15.37B(b)) .....	17
3.2. Volume information accuracy (Clause 15.2 and 15.37B(c)) .....	21
Conclusion .....	23
Participant response .....	24

## EXECUTIVE SUMMARY

This audit of the **Waipa District Council Unmetered Streetlights (WDC)** DUML database and processes was conducted at the request of **Genesis Energy Ltd (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.

The database is remotely hosted by thinkproject New Zealand Ltd and is managed by Waipa DC. McKay Electrical conducts the installation fieldwork and maintenance. As detailed in the last audit, they are expected to update RAMM with all changes made in the field. This was hoped to have been resolved during the audit period but due to contractor staff changes progress has been delayed. I have repeated the recommendation from the last audit to undertake a full field audit to bring the database up to date. I have also recommended that quality control processes are put in place to better manage the data quality so that changes going forward are accurate.

Waipa DC provides reporting to Genesis on a monthly basis, and this includes any changes made during the month so that change is calculated on a daily basis as required by the code. New lights are recorded on the monthly report, but I recommend that a field in RAMM is used to indicate the correct date of electrical connection.

This audit found four non-compliances and makes five recommendations. The future risk rating of 30 indicates that the next audit be completed in three months. I have considered this in conjunction with the Genesis' comments and recommend that the next audit is conducted in six months time.

The matters raised are detailed in the table 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	The database is outside of the allowable +/-5% threshold. There is a 95% level of confidence that the annual consumption is between 4,900 kWh p.a. lower to 166,300 kWh p.a. higher than the database indicates.	Weak	High	9	Investigating
All load recorded in database	2.5	11(2A) of Schedule 15.3	Three additional items of load were found in the field.	Weak	Low	3	Investigating
Database accuracy	3.1	15.2 and 15.37B(b)	The database is outside of the allowable +/-5% threshold. There is a 95% level of confidence that the annual consumption is between 4,900 kWh p.a. lower to 166,300 kWh p.a. higher than the database indicates.  One light recorded with the incorrect light type.	Weak	High	9	Investigating
Volume information accuracy	3.2	15.2 and 15.37B(c)	The database is outside of the allowable +/-5% threshold. There is a 95% level of confidence that the annual consumption is between 4,900 kWh p.a. lower to 166,300 kWh p.a. higher than the database indicates.	Weak	High	9	Investigating
Future Risk Rating						30	

<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
Location of each item of load	2.3	Add GPS co-ordinates for three items of load in the McKinnon car park.
Database accuracy	3.1	Undertake 100% field audit to bring database up to date, including resurveying the Te Awamutu under verandah lighting and plotting these correctly.
		Confirm the correct lamp wattage for all lights labelled 60W MH in the field but recorded as 70W HPS in the database in Leamington.
		Put quality control processes in place to improve data accuracy from the field.
		Use one of the fields in RAMM to record the electrical connection date of new streetlights.

## 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

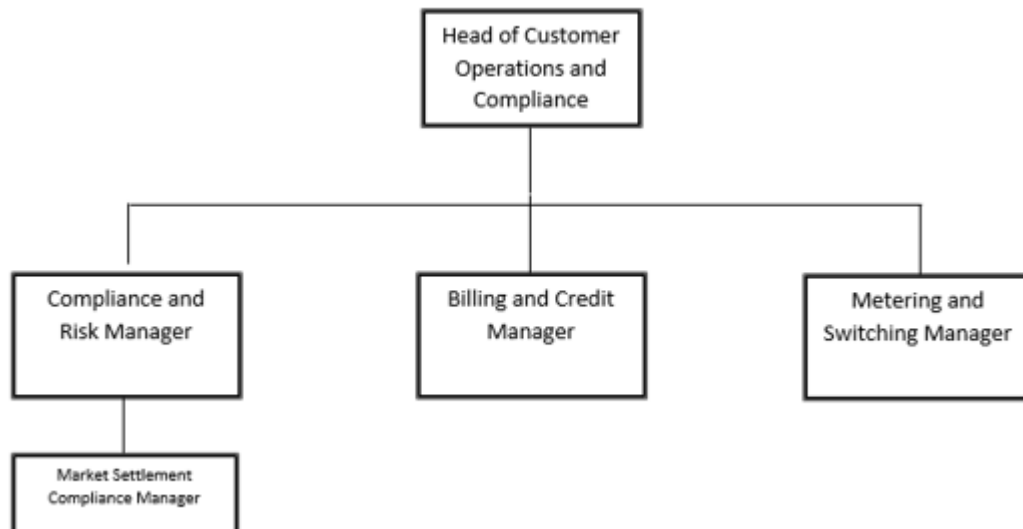
Section 11 of the Electricity Industry Act provides for the Electricity Authority to exempt any participant from compliance with all or any of the clauses.

#### Audit commentary

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	Company	Role
Rebecca Elliot	Veritek Limited	Auditor

Other personnel assisting in this audit were:

Name	Title	Company
Kim Wright	Asset Information Officer - Transportation	Waipa District Council
Nivar Teli	DUML Data & Stakeholder Lead	Genesis Energy

### 1.4. Hardware and Software

**Section 1.8** shows that the SQL database used for the management of DUML is remotely hosted by thinkproject New Zealand Ltd. The database is commonly known as “RAMM” which stands for “Roading Asset and Maintenance Management”. The specific module used for DUML is called RAMM Contractor.

Database 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 to calculate submissions are assessed as part of their reconciliation participant audit.

### 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)
0000041292WEDF7	Waipa District Council - Tamahere	HAM0331	DST	95	6,801
0000041294WEC78	Oaklands Drive	OAK0111	DST	50	2,970
0000400319WA4CA	Waipa DC TMU0111 S/L	TMU0111	DST	2,284	86,065
0000806500WA13E	Waipa DC CBG0111 S/L	CBG0111	DST	2,802	128,818
Total				5,231	224,654

### 1.7. Authorisation Received

All information was provided directly by Genesis or WDC.

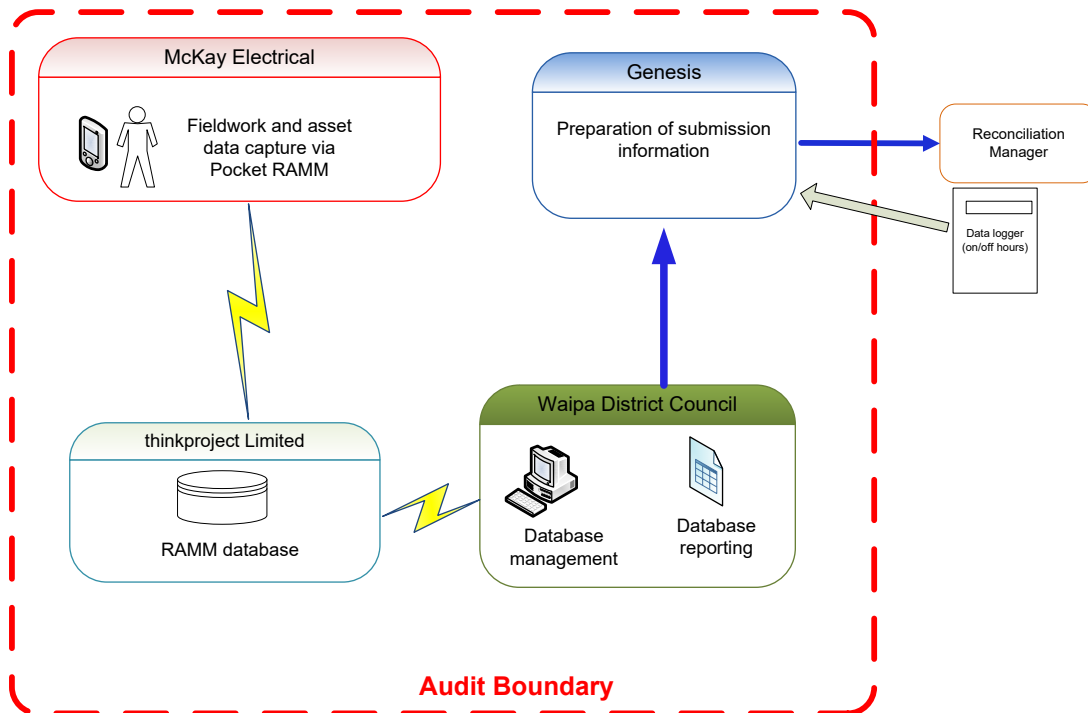
### 1.8. Scope of Audit

This audit of the Waipa District Council Unmetered Streetlights (WDC) DUML database and processes was conducted at the request of Genesis Energy Limited (Genesis), in accordance with clause 15.37B. The purpose of this audit is to verify that the volume information is being calculated accurately, and that profiles have been correctly applied.

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

The database is remotely hosted by thinkproject New Zealand Ltd and is managed by Waipa DC. McKay Electrical conducts the installation fieldwork and maintenance. They provide information on all work carried out back to Waipa DC and this is then loaded into RAMM. Waipa DC provides reporting 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 contents. The diagram below shows the audit boundary for clarity.



The field audit was undertaken of a statistical sample of 254 items of load on May 12<sup>th</sup>, 2023.



## 1.9. Summary of previous audit

The previous audit was conducted in August 2022 by Rebecca Elliot of Veritek Limited. The status of compliance against the clauses are detailed in the table below.

### Table of Non-Compliance

Subject	Section	Clause	Non-compliance	Status
Deriving submission information	2.1	11(1) of Schedule 15.3	The database is outside of the allowable +/-5% threshold. There is a 95% level of confidence that the annual consumption is between 30,500 kWh p.a. to 361,400kWh p.a. higher than the database indicates.	Still existing
All load recorded in database	2.5	11(2A) of Schedule 15.3	Three additional items of load were found in the field.	Still existing
Database accuracy	3.1	15.2 and 15.37B(b)	The database is outside of the allowable +/-5% threshold. There is a 95% level of confidence that the annual consumption is between 30,500 kWh p.a. to 361,400kWh p.a. higher than the database indicates.  Seven items of load with the incorrect ballast and one light recorded with the incorrect light type. This will result in a very minor amount of over submission.  Electrical connection dates may be incorrect for new subdivisions.	Still existing
Volume information accuracy	3.2	15.2 and 15.37B(c)	The database is outside of the allowable +/-5% threshold. There is a 95% level of confidence that the annual consumption is between 30,500 kWh p.a. to 361,400kWh p.a. higher than the database indicates.	Still existing

### Table of Recommendations

Subject	Section	Recommendation	Status
Database accuracy	3.1	Undertake 100% field audit to bring database up to date, including resurveying the Te Awamutu under verandah lighting and plotting these correctly.	Repeated
		Confirm the correct lamp wattage for all lights labelled 60W MH in the field but recorded as 70W HPS in the database in Leamington.	Repeated
		Put quality control processed in place to improve data accuracy from the field.	Repeated

## 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.

### **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 the DUML load as NHH using the NST profile. A RAMM extract is sent each month, and this includes changes made during the month, so changes are calculated on a daily basis. The total volume submitted to the Reconciliation Manager is based on a monthly database report derived from RAMM and the “burn time” which is sourced from data loggers installed on the WEL and Waipa networks.

I recalculated the submissions for February 2023 using the data logger and the database information and the submission figures matched.

As recorded in **section 3.1**, the database is outside of the allowable +/-5% threshold. There is a 95% level of confidence that the annual consumption is between 4,900 kWh p.a. lower to 166,300 kWh p.a. higher than the database indicates. be resulting in an estimated under annual submission of 131,400 kWh and could potentially be between 30,500 kWh p.a. to 361,400 kWh p.a. under submission.

#### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 2.1 With: Clause 11(1) of schedule 15.3  From: 01-Aug-22 To: 27-Feb-23	The database is outside of the allowable +/-5% threshold. There is a 95% level of confidence that the annual consumption is between 4,900 kWh p.a. lower to 166,300 kWh p.a. higher than the database indicates.  Potential impact: High  Actual impact: High  Audit history: Multiple times  Controls: Weak  Breach risk rating: 9		
Audit risk rating	Rationale for audit risk rating		
High	The controls are rated as weak as the processes in relation to submission are strong but there are no controls in place to ensure the database is accurate, so the overall rating is assessed to be weak.  The impact is assessed to be high, based on the kWh differences described above.		
Actions taken to resolve the issue		Completion date	Remedial action status
Genesis has highlighted the importance of accuracy in database and relies on WDC to accurately maintain its database. Genesis has also suggested a full field will improve the database accuracy drastically		Continuous Improvement	Investigating
Preventative actions taken to ensure no further issues will occur		Completion date	
Genesis continues to work with the council to increase accuracy levels in their database.		Continuous Improvement	

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

### Code reference

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

### Code related audit information

*The 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 an ICP was recorded against each item of load.

### Audit commentary

All items of unmetered load in RAMM have an ICP number recorded. There are 18 items of load with no ICP recorded but these are all solar lights, so are not in the scope of this audit.

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

### Audit commentary

The database contains the nearest street address for all items of load and all, but four items of load have a GPS location recorded. One item of load on Bank St (pole no. 53148) has the distance from the end of the road recorded which is sufficient. The remaining three items of load are recorded as McKinnon car park and are the only three lights associated with this car park, so the location is sufficient, but I recommend that the GPS co-ordinates are added for completeness.

Recommendation	Description	Audited party comment	Remedial action
Location of each item of load	Add GPS co-ordinates for three items of load in the McKinnon car park.	Genesis has brought this to the attention of WDC with the intent that WDC takes every effort to have this updated.	[auditor comments]

The field audit found that the GPS co-ordinates for a number of items of load were incorrect. This is discussed in **section 3.1**.

### 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 each item of load had a value recorded in these fields.

### Audit commentary

The database contains two records for wattage, firstly the lamp wattage and secondly the gear wattage, which represents ballast losses. The wattage value was being derived by separating the lamp model value out to a separate column instead of using the value recorded in the lamp wattage field. This has been corrected from July 2022. The accuracy of the ballast values applied is discussed in **section 3.1**.

The previous audits found that the lamp type descriptions for LEDs was insufficient to determine the correct wattage was applied. I confirmed in this audit that these are recorded in the database, but that the data hadn't been supplied previously. These are sufficient to determine the correct lamp wattage.

### 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 254 items of load.

### Audit commentary

The field audit discrepancies are detailed in the table below.

Discrepancy	Quantity
Items of load in the field not in the database	3
Items of load in the database not in the field	3
Incorrect wattages	25

I rechecked the discrepancies from the last two audits and found all but ten have been corrected. The remaining ten items of load are still being investigated and will be updated once checked in the field.

The field audit found three additional lamps in the field.

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-Aug-22 To: 27-Feb-23	Three additional items of load were found in the field. 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 there are no quality control processes in place to ensure data quality in the field. 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
Genesis has brought this to the attention of WDC with the intent that WDC takes every effort to update their database		01/07/2023	Investigating
Preventative actions taken to ensure no further issues will occur		Completion date	
Genesis continues to work with the council to increase accuracy levels in 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 process for tracking of changes in the database was examined.

### Audit commentary

The RAMM database functionality achieves compliance with the code.

The change management process and the compliance of the database reporting provided to Genesis is detailed in **sections 3.1** and **3.2**.

### 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 DUMML 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 RAMM database has a complete audit trail of all additions and changes to the database information.

### **Audit outcome**

Compliant



### 3. ACCURACY OF DUML DATABASE

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

##### Code reference

Clause 15.2 and 15.37B(b)

##### Code related audit information

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

##### Audit observation

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	Te Awamutu and surrounds
Strata	The database contains items of load in Waipa District Council area. The processes for the management of WDC items of load are the same, but I decided to place the items of load into four strata, as follows: <ol style="list-style-type: none"> <li>1. Waipa A-C,</li> <li>2. Waipa D-L,</li> <li>3. Waipa M-S, and</li> <li>4. Waipa T-Z.</li> </ol>
Area units	I created a pivot table of the roads in each area, and I used a random number generator in a spreadsheet to select a total of 46 sub-units.
Total items of load	254 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 254 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	107.0	Wattage from survey is higher than the database wattage by 7.0%
R <sub>L</sub>	99.5	With a 95% level of confidence, it can be concluded that the error could be between -0.5% and +17.3%
R <sub>H</sub>	117.3	

These results were categorised in accordance with the “Distributed Unmetered Load Statistical Sampling Audit Guideline”, effective from 1 February 2019. The conclusion from Scenario B is that the variability of the sample results across the strata with statistical significance means that the true wattage (installed in the field) could be between 0.5% lower and 17.3% higher than the wattage recorded in the DUMML database. Non-compliance is recorded because the potential error is greater than 5.0%.

- In absolute terms the installed capacity is estimated to be 16.0 kW higher than the database indicates.
- There is a 95% level of confidence that the installed capacity is between 1 kW lower to 39 kW higher than the database.
- In absolute terms, total annual consumption is estimated to be 66,800 kWh higher than the DUMML database indicates.
- There is a 95% level of confidence that the annual consumption is between 4,900 kWh p.a. lower to 166,300 kWh p.a. higher than the database indicates.

Scenario	Description
<b>A - Good accuracy, good precision</b>	<p>This scenario applies if:</p> <p>(a) <math>R_H</math> is less than 1.05; and</p> <p>(b) <math>R_L</math> 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 +/- 5 %; and</p> <p>(b) this is the best outcome.</p>
<b>B - Poor accuracy, demonstrated with statistical significance</b>	<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 <math>R_L</math> is less than 0.95 or <math>R_H</math> 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>
<b>C - Poor precision</b>	<p>This scenario applies if:</p> <p>(a) the point estimate of R is between 0.95 and 1.05</p> <p>(b) <math>R_L</math> is less than 0.95 and/or <math>R_H</math> 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 +/- 5 %</p>

I repeat the last audit’s recommendation that a full field audit is undertaken to correct the data.

Recommendation	Description	Audited party comment	Remedial action
Database accuracy	Undertake 100% field audit to bring database up to date, including resurveying the Te Awamutu under verandah lighting and plotting these correctly.	Genesis has suggested WDC to conduct a full field audit to improve database accuracy. WDC have advised they will be looking into this.	Investigating

## Lamp description and capacity accuracy

### Wattage accuracy

The database contains two records for wattage, firstly the lamp wattage and secondly the gear wattage, which represents ballast losses.

As reported in the last audit, there are approximately 221 lights in the Leamington area that are labelled as 60W metal halide. According to the Electricity Authority there is no such light type so these are likely to be 60W HPS lights (total 74W) but are recorded in the database as 70W HPS (83W total wattage). Genesis was working with Waipa DC to determine if these have been incorrectly updated or are they all 60W lights with a 14W ballast. Due to contractor staff changes progress to resolve this has been delayed. Therefore, I recorded compliance as I cannot determine which is correct and I have repeated the recommendation from the last audit to maintain visibility.

Recommendation	Description	Audited party comment	Remedial action
Database accuracy	Confirm the correct lamp wattage for all lights labelled 60W MH in the field but recorded as 70W HPS in the database in Leamington.	WDC has been notified of the asset discrepancies. Genesis relies on WDC to accurately maintain its database.	Investigating

As found in the last audit there is one incorrect light type of 90W MH but there is no such light type exists. This has been passed to WDC to investigate.

### **NZTA lighting**

NZTA lights are not included in the load recorded by WDC. These are managed by NZTA directly.

### **Private lights**

No private lights are recorded in the database.

### **ICP accuracy**

All items of load have the correct ICP recorded.

### **Location accuracy**

The under-verandah lighting in Te Awamutu identified in the last audit still has the incorrect the GPS coordinates were incorrect. I recommend that all the under-verandah lighting is resurveyed and plotted correctly as part of the 100% field audit recommended above.

### **Change management process findings**

Processes to track changes to the database were reviewed.

McKay Electrical enters details of changes directly into the database using pocket RAMM for maintenance. As reported in the last audit, the database accuracy indicates that changes made are not being updated accurately. I repeat the last audit's recommendation that quality control processes be put in place such as reviewing who has entered incorrect data and working with the contractor to address this.

Recommendation	Description	Audited party comment	Remedial action
Database accuracy	Put quality control processes in place to improve data accuracy from the field.	Genesis has discussed with WDC to look into their quality control process and make changes as required.	Investigating

Subdivision information comes from developers via “as built” plans. Waipa DC go out into the field to plot the new assets and verify the details. Waipa Network advise when new connections have been completed. This is noted on the monthly report to Genesis, and they use this when calculating the monthly submission. The code requires that this information is recorded in the database. I recommend using one of the available fields such as light install date in RAMM to record the electrical connection date.

Recommendation	Description	Audited party comment	Remedial action
Database accuracy	Use one of the fields in RAMM to record the electrical connection date of new streetlights.	Genesis has notified WDC of auditor’s recommendation with an intent that WDC incorporates this in their database	Investigating

There are no festive lights connected to the streetlight circuits.

### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 3.1 With: Clause 15.2 and 15.37B(b)  From: 01-Aug-22 To: 27-Feb-23	<p>The database is outside of the allowable +/-5% threshold. There is a 95% level of confidence that the annual consumption is between 4,900 kWh p.a. lower to 166,300 kWh p.a. higher than the database indicates.</p> <p>One light recorded with the incorrect light type.</p> <p>Potential impact: High</p> <p>Actual impact: High</p> <p>Audit history: Three times previously</p> <p>Controls: Weak</p> <p>Breach risk rating: 9</p>		
Audit risk rating	Rationale for audit risk rating		
<b>High</b>	<p>The controls are rated as weak as the processes in place to track changes requires improvement.</p> <p>The impact is assessed to be high, based on the estimated kWh differences described above.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
Genesis has highlighted the importance of accuracy in database and relies on WDC to accurately maintain its database. Genesis has also suggested a full field will improve the database accuracy drastically		Continuous Improvement	Investigating
Preventative actions taken to ensure no further issues will occur		Completion date	
Genesis continues to work with the council to increase accuracy levels in their database.		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 the DUML load as NHH using the NST profile. A RAMM extract is sent each month, and this includes changes made during the month, so changes are calculated on a daily basis. The total volume submitted to the Reconciliation Manager is based on a monthly database report derived from RAMM and the “burn time” which is sourced from data loggers installed on the WEL and Waipa networks.

I recalculated the submissions for February 2023 using the data logger and the database information and the submission figures matched.

As recorded in **section 3.1**, the database is outside of the allowable +/-5% threshold. There is a 95% level of confidence that the annual consumption is between 4,900 kWh p.a. lower to 166,300 kWh p.a. higher than the database indicates. be resulting in an estimated under annual submission of 131,400 kWh and could potentially be between 30,500 kWh p.a. to 361,400 kWh p.a. under submission.

#### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 3.2 With: Clause 15.2 and 15.37B(c)  From: 01-Aug-22 To: 27-Feb-23	The database is outside of the allowable +/-5% threshold. There is a 95% level of confidence that the annual consumption is between 4,900 kWh p.a. lower to 166,300 kWh p.a. higher than the database indicates.  Potential impact: High  Actual impact: High  Audit history: Multiple times  Controls: Weak  Breach risk rating: 9		
Audit risk rating	Rationale for audit risk rating		
<b>High</b>	The controls are rated as weak as the processes in relation to submission are strong but there are no controls in place to ensure the database is accurate, so the overall rating is assessed to be weak.  The impact is assessed to be high, based on the kWh differences described above.		
Actions taken to resolve the issue		Completion date	Remedial action status
Genesis has highlighted the importance of accuracy in database and relies on WDC to accurately maintain its database. Genesis has also suggested a full field will improve the database accuracy drastically		Continuous Improvement	Investigating
Preventative actions taken to ensure no further issues will occur		Completion date	
Genesis continues to work with the council to increase accuracy levels in their database.		Continuous Improvement	

## CONCLUSION

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 Waipa DC. McKay Electrical conducts the installation fieldwork and maintenance. As detailed in the last audit, they are expected to update RAMM with all changes made in the field. This was hoped to have been resolved during the audit period but due to contractor staff changes progress has been delayed. I have repeated the recommendation from the last audit to undertake a full field audit to bring the database up to date. I have also recommended that quality control processes are put in place to better manage the data quality so that changes going forward are accurate.

Waipa DC provides reporting to Genesis on a monthly basis, and this includes any changes made during the month so that change is calculated on a daily basis as required by the code. New lights are recorded on the monthly report, but I recommend that a field in RAMM is used to indicate the correct date of electrical connection.

This audit found four non-compliances and makes five recommendations. The future risk rating of 30 indicates that the next audit be completed in three months. I have considered this in conjunction with the Genesis' comments and recommend that the next audit is conducted in six months time.

## PARTICIPANT RESPONSE

Genesis continues to build on their relationship with the council and will continue to work with them to increase accuracy level in their database