

ELECTRICITY INDUSTRY PARTICIPATION CODE  
DISTRIBUTED UNMETERED LOAD AUDIT REPORT

VERITEK

For

NAPIER CITY COUNCIL AND  
GENESIS ENERGY

Prepared by: Rebecca Elliot

Date audit commenced: 1 October 2018

Date audit report completed: 8 November 2018

Audit report due date: 01-Dec-18

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## EXECUTIVE SUMMARY

This audit of the Napier City Council Unmetered Streetlights (**NCC**) 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 scope of the audit encompasses the collection, security and accuracy of the data, including the preparation of submission information. The database is remotely hosted by RAMM Software Ltd and is managed by Power Solutions on behalf of NCC, who is Genesis' customer. The fieldwork and asset data capture is conducted by Pope Electrical. Reporting is provided to NCC, Unison and Genesis on a monthly basis.

This audit found five non-compliances and makes no recommendations. The field audit found the database accuracy was high, but I found a variance in the number of items of load being reconciled vs. the database volumes for one ICP and the submission calculation was marginally different.

Genesis are continuing to work with Unison to resolve the 134 private lights reported in the last audit. If any are confirmed to belong to council, they will have the correct ICP added to them.

The future risk rating of 21 indicates that the next audit be completed in three months but I recommend the next audit be in six months time to allow time for Genesis to work with NCC to correct the matters raised in this audit. 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>Under submission of approximately 102.48kWh annually due to incorrect submission calculation.</p> <p>Under submission of approximately 116,751kWh for ICP 0000939906HBEFE due to missing items of load in monthly report.</p> <p>17 items of load with no ICP resulting in an estimated under submission of 803 kWh per annum.</p> <p>40 items of load recorded with zero wattage, estimate of 16,571 kWh per annum.</p>	Moderate	High	6	Investigating
ICP identifier and items of load	2.2	11(2)(a) and (aa) of Schedule 15.3	17 items of load do not have an ICP recorded resulting in an estimated 803kWh of under submission per annum.	Weak	Low	3	Identified
Description and capacity of load	2.4	11(2)(c) and (d) of Schedule 15.3	<p>40 items of load recorded with zero wattage, estimate of 16,571 kWh per annum.</p> <p>66 items of load with no gear wattage recorded in the database.</p>	Moderate	Low	2	Investigating

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Database accuracy	3.1	15.2 and 15.37B(b)	<p>The ballasts in RAMM are not used for reconciliation and they are not recorded correctly in RAMM.</p> <p>17 items of load with no ICP resulting in an estimated Under submission of 803 kWh per annum.</p> <p>40 items of load recorded with zero wattage, estimate of 16,571 kWh per annum.</p>	Moderate	Medium	4	Investigating
Volume information accuracy	3.2	15.2 and 15.37B(c)	<p>Under submission of approximately 102.48kWh annually due to incorrect submission calculation.</p> <p>Under submission of approximately 116,751kWh for ICP 0000939906HBEFE due to missing items of load in monthly report.</p> <p>17 items of load with no ICP resulting in an estimated Under submission of 803 kWh per annum.</p> <p>40 items of load recorded with zero wattage, estimate of 16,571 kWh per annum.</p>	Moderate	High	6	Investigating
Future Risk Rating						21	

<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	Action
		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

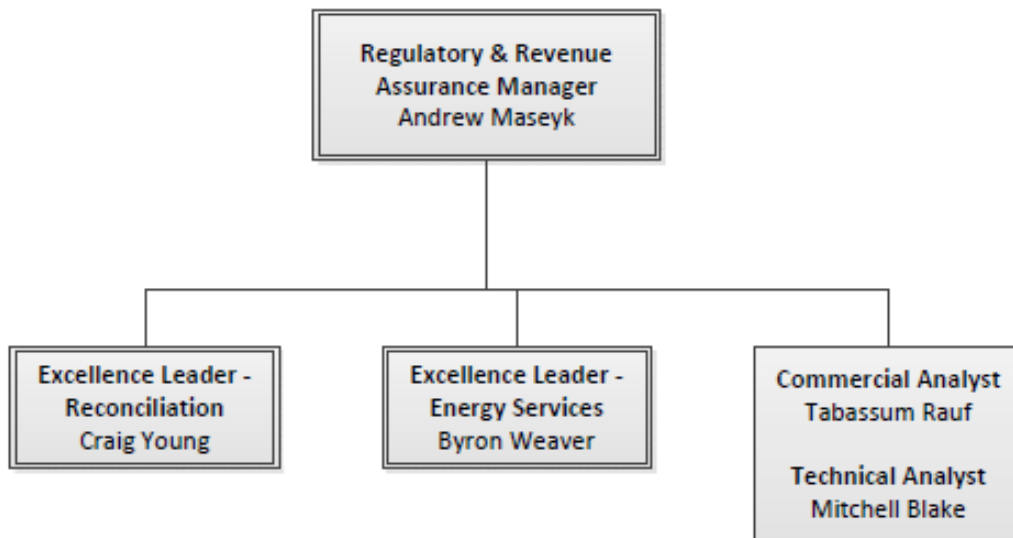
Section 11 of the Electricity Industry Act provides for the Electricity Authority to exempt any participant from compliance with all or any of the clauses.

#### Audit commentary

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
Rebecca Elliot	Lead Auditor
Debbie Anderson	Supporting Auditor

Other personnel assisting in this audit were:

Name	Title	Company
Craig Young	Excellence Leader- Reconciliation	Genesis Energy
Grace Hawken	Technical Specialist - Reconciliations Team	Genesis Energy
Jon Stevens	Projects Engineer	Power Solutions

#### 1.4. Hardware and Software

A Rooding Asset and Maintenance Management database, commonly known as RAMM continues to be used the management of DUML. This is remotely hosted by RAMM Software Ltd. The specific module used for DUML is called “SLIMM” which stands for “Streetlighting Inventory Maintenance Management”.

Power Solutions confirmed that the database back-up is in accordance with standard industry procedures. Access to the database is secure by way of password protection.

#### 1.5. Breaches or Breach Allegations

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

#### 1.6. ICP Data

ICP Number	Description	NSP	Profile	Number of items of load	Database wattage (watts)
0000939920HB224	Marine Parade Lighting	RDF0331	NST	21	2,108
0000939921HBE61	Carriageway Lighting	RDF0331	NST	162	26,567
0000939923HBEE4	Amenity Lighting	RDF0331	NST	82	5,885
0000939906HBEFE	Road Lighting	RDF0331	NST	7,467	732,691
0000939908HBD65	Amenity Lighting	RDF0331	NST	1,098	97,737
Total				8,830	864,988

As reported in the last audit report there are 134 lights where the ICP is reported as private. There are 17 lights recorded with no ICP. These are both discussed in **section 2.2**.

#### 1.7. Authorisation Received

All information was provided directly by Genesis or Power Solutions.

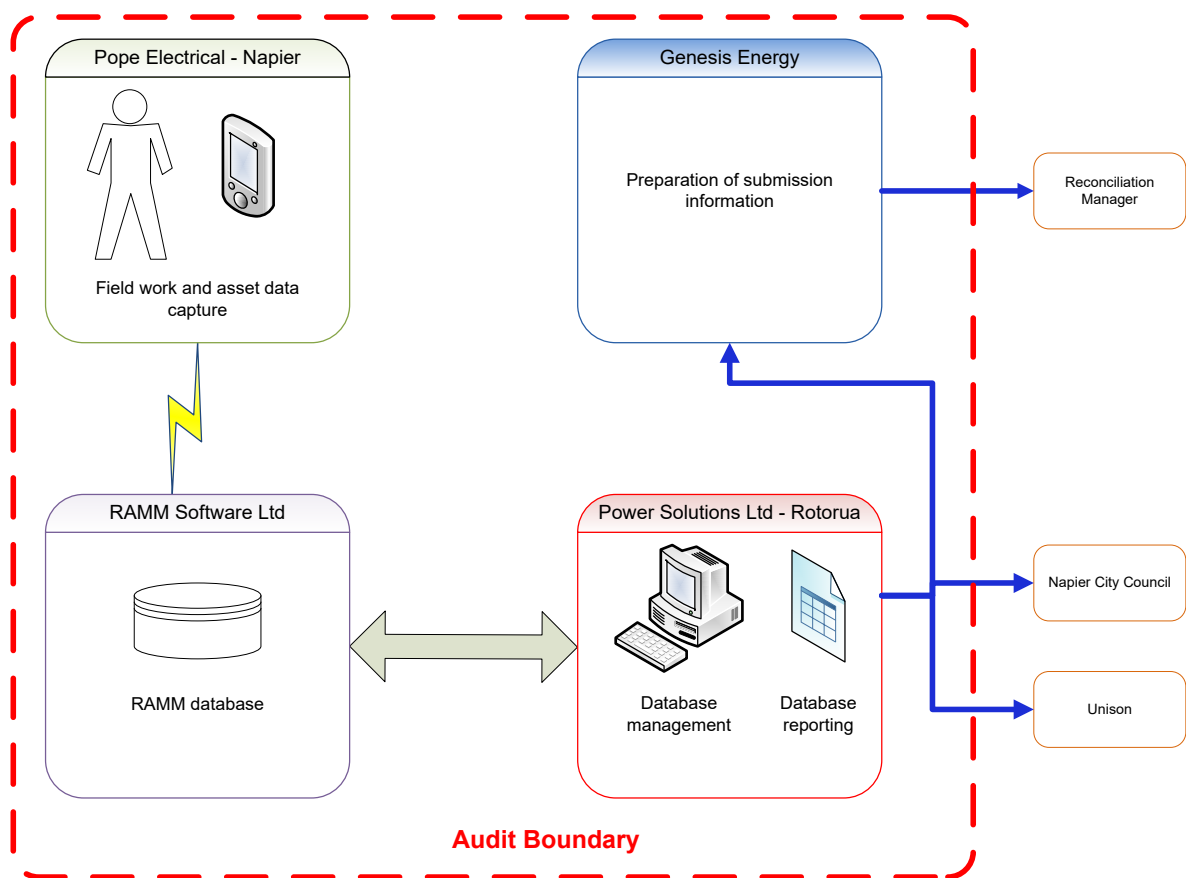


## 1.8. Scope of Audit

This audit of the Napier City Council Unmetered Streetlights (**NCC**) 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 RAMM Software Ltd and is managed by Power Solutions on behalf of NCC, who is Genesis' customer. The fieldwork and asset data capture is conducted by Pope Electrical. Reporting is provided to NCC, Unison and Genesis on a monthly basis. The scope of the audit encompasses the collection, security and accuracy of the data, including the preparation of submission information based on the database reporting. The diagram below shows the audit boundary for clarity.



The field audit was undertaken of a statistical sample of 289 items of load on 10<sup>th</sup> October 2018.

## 1.9. Summary of previous audit

Genesis provided a copy of the last audit report undertaken by Rebecca Elliot of Veritek Limited in May 2018. This audit report was undertaken for Genesis as part of their 2018 reconciliation participant audit.

### Table of Non-Compliance

Subject	Section	Clause	Non-Compliance	Status
Deriving submission information	2.1	11(1) of Schedule 15.3	The database accuracy is assessed to be 115.9% indicating an estimated under submission of 556,000 kWh per annum (excluding ballast).  The ballasts are not recorded correctly in the RAMM database.	Still existing
Description and capacity of load	2.4	11(2)(c) and (d) of Schedule 15.3	54 items of load with no gear wattage recorded.  19 items of load recorded with zero wattage.	Still existing
All load recorded in the database	2.5	11(2A) of Schedule 15.3	Items of load are missing from the database.	Cleared
Database accuracy	3.1	15.2 and 15.37B(b)	The database accuracy is assessed to be 115.9% indicating an estimated under submission of 556,000 kWh per annum (excluding ballast).  The ballasts are not recorded correctly in the RAMM database.	Still existing
Volume information accuracy	3.2	15.2 and 15.37B(c)	The database accuracy is assessed to be 115.9% indicating an estimated under submission of 556,000 kWh per annum (excluding ballast).  The ballasts are not recorded correctly in the RAMM database.	Still existing

### Table of Recommendations

Subject	Section	Clause	Recommendation for Improvement	Status
ICP Identifier	2.2		Liaise with Unison to confirm these are private lights and not incorrectly recorded as private.	In progress
Tracking of Load Change	2.6	11(3) of schedule 15.3	Put a process of notification in place to ensure if festive lighting is connected to the unmetered street light circuit, it is captured for reconciliation and billing purposes.	Cleared

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

### Code reference

*Clause 16A.26 and 17.295F*

### **Code related audit information**

*Retailers must ensure that DUML database audits are completed:*

- 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. Compliance is confirmed

## 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 derived from RAMM and the “burn time” which is sourced from data loggers installed on the Unison network. The methodology is compliant. I checked the accuracy of the submission and found some minor under submission of 8.54 kWh for the month of September 2018. This detailed in **section 3.2**.

A comparison between the submission figures provided in September 2018 from Genesis and the database extract found light volume differences for ICP 0000939906HBEFE resulting in the estimated submission variances below:

ICP	Registry Description	Mthly wattage report Fittings number for September 2018	Data extract fittings @ 24/9/18	Lamp count difference	Mthly wattage report kW value	Data extract kW value as @24/8/18	kW difference	GENE kWh submission	Wattage report kWh	kWh difference for September
0000939906HBEFE	Road Lighting	7,355	7,467	112	706.53	732.69	26.16	262,648.00	272,377.27	-9,729.27

Annualised this equates to an estimated 116,751kWh of potential under submission. This is recorded as non-compliance below and in **section 3.2**.

There is some inaccurate data within the database used to calculate submissions as detailed in the table below. This is recorded as non-compliance and discussed in **sections 2.2, 2.4, 3.1 and 3.2**.

Issue	Volume information impact (annual kWh)
17 items of load with no ICP recorded therefore these are not being reconciled.	803 kWh under submission
40 records have blank or unknown lamp wattages	16,571 kWh under submission estimate per annum based on an average wattage of 97 watts.

## Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 2.1 With: Clause 11(1) of Schedule 15.3  From: 01-May-18 To: 30-Sep-18	Under submission of approximately 102.48kWh annually due to incorrect submission calculation.  Under submission of approximately 116,751kWh for ICP 0000939906HBEFE due to missing items of load in monthly report.  17 items of load with no ICP resulting in an estimated under submission of 803 kWh per annum.  40 items of load recorded with a blank-wattage, estimate of 16,571 kWh per annum.  Potential impact: High  Actual impact: High  Audit history: None  Controls: Moderate  Breach risk rating: 6		
Audit risk rating	Rationale for audit risk rating		
<b>High</b>	The controls are rated as moderate, because they are sufficient to ensure that changes to the database are correctly recorded most of the time.  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 have relied on the summary of information provided on behalf of Napier CC, PSL. The summary does not identify individual lamp detail in which Genesis have requested.		01/02/2019	Investigating
Preventative actions taken to ensure no further issues will occur		Completion date	
Genesis want to analyse detailed lamp data to verify information being provided. The analysis will also provide the opportunities for feedback regarding any potential dataset errors.		01/02/2019	

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

### Code reference

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

### Code related audit information

*The DUML database must contain:*

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

### Audit observation

The database was checked to confirm the correct ICP was recorded against each item of load.

### Audit commentary

As reported the last audit, there are 134 items of load where the ICP is recorded as PRIVATE and these are not reconciled as part of the council load. These are being investigated in conjunction with Unison and if found to belong to the council the correct ICP will be added.

There are 17 records with a total wattage of 188 watts with no ICP recorded in the database, therefore these are not being reconciled. This will be resulting in an estimated 803 kWh of under submission per annum. This is recorded as a non-compliance.

### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 2.2 With: Clause 11(2)(a) and (aa) of Schedule 15.3 From: 01-May-18 To: 30-Sep-18	17 items of load do not have an ICP recorded resulting in an estimated 803kWh of under submission per annum. Potential impact: High Actual impact: Low Audit history: None Controls: Weak Breach risk rating: 3		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	The controls are rated as weak, as items of load are being added with no ICP recorded by the field contractor during the audit period. The audit risk rating is low, due to the estimated under submission of approximately 803 kWh per annum.		
Actions taken to resolve the issue		Completion date	Remedial action status
Genesis are in communication with (PSL) Power solutions ltd who maintain the RAMM database. Jon Steven has just reported that he has established the Private lights are not part of the council's responsibilities and are removing them from the database. Jon has also stated that he is working through the issues identified and will keep Genesis informed of changes that are happening. The completion date is an indicative date.		01/06/2019	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Genesis are reviewing the monthly summaries provided by PSL and have requested the RAMM data extraction to verify the information provided by PSL and the values entered by the auditor. This will provide Genesis with an overview of all information assisting in database accuracy improvements		01/02/2019	

## 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, displacement value and pole numbers and Global Positioning System (GPS) coordinates for majority of items of load and users in the office and field can view these locations on a mapping system.

There is one item of that that does not have either displacement or pole number, but it does have GPS co-ordinates in addition to the road name.

### 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. Analysis of the database found 21 lamps that do not have a lamp model, type or wattage recorded in the database and a further 19 lamps with vague lamp model descriptions but also no wattage recorded in the database. These are detailed in the table below:

Lamp type	Volume
1W LED	9
LED in 4.5.27	3
Parking Machine Battery Charge	7
(blank)	21
<b>Total – no wattage</b>	<b>40</b>

I have estimated 16,571 kWh of under submission per annum based on an average wattage of 97 watts. This is recorded as non-compliance below and in **sections 2.1** and **3.2**.



66 items of load have no gear wattage recorded for lights where gear wattage is expected. This is recorded as non-compliance below.

As discussed in **section 3.1**, the ballast in RAMM is not correct and is not used for submission. The correct wattages are added in the monthly report. The correct ballasts are applied but this needs to be in the database. This is recorded as non-compliance in **section 3.1**.

**Audit outcome**

Non-compliant

Non-compliance	Description		
Audit Ref: 2.4 With: Clause 11(2)(c) & (d) of Schedule 15.3  From: 01-May-18 To: 30-Sep-18	40 items of load recorded with a blank wattage, estimate of 16,571 kWh per annum. 66 items of load with no gear wattage recorded in the database.  Potential impact: Low Actual impact: None Audit history: Once Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	The controls are rated as moderate, because they are sufficient to ensure that lamp information is correctly recorded most of the time.  The impact is assessed to be low, as the correct ballasts and wattages are added to the monthly report.		
Actions taken to resolve the issue		Completion date	Remedial action status
Summaries provided by the third-party contractor PSL do not include null values. Therefore, Genesis was unaware of any missing information. Genesis has requested a RAMM database extraction of the detailed information assisting in identifying any potential data discrepancies.		01/06/2019	Investigating
Preventative actions taken to ensure no further issues will occur		Completion date	
Genesis are reviewing the monthly summaries provided by PSL and have requested the RAMM data extraction to verify the information provided by PSL and the values entered by the auditor. This will provide Genesis with an overview of all information assisting in database accuracy improvements		01/02/2019	

## 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 308 items of load on 8<sup>th</sup> and 10<sup>th</sup> October 2018.

### Audit commentary

The field audit findings are detailed in the table below:

Street	Database count	Field count	Light count differences	Wattage recorded incorrectly	Comments
<b>Amenity Lighting</b>					
DOUGLAS MCLEAN AVENUE	1	1	-	-	
HERSCHELL STREET	1	1	-	-	
HILLARY CRESCENT	2	2	-	-	
LOGAN AVENUE	1	1	-	-	
HARDINGE ROAD	9	9	-	-	
FRANCE ROAD	2	2	-	-	
CARDIFF PLACE	1	1	-	-	
BARRY STREET	3	3	-	-	
RUSSELL ROAD	5	5	-	-	
SHACKLETON STREET	1	1	-	-	
ARTHUR HOBSON AVENUE	2	2	-	-	
<b>Housing for the elderly</b>					
CENTENNIAL VILLAGE NORTH LINK	3	3	-	-	
<b>Car Park Lighting</b>					
DOUGLAS MCLEAN AVENUE	2	2	-	-	
HERSCHELL STREET	4	4	-	1	1 LED (4 Module LED – 54W) recorded as a Fluro (14W + 17W)

Street	Database count	Field count	Light count differences	Wattage recorded incorrectly	Comments
					Ballast) in the database
<b>Urban</b>					
BALMORAL STREET	22	22			
BARRY STREET	4	4			
CHARLES STREET	48	48			
FRANCE ROAD	11	11			
HARDINGE ROAD	26	26			
KENSINGTON DRIVE	34	34			
PRIESTLEY ROAD	5	5			
BRIDGE STREET	4	4			
HERSCHELL STREET	6	6			
TRAVIS STREET	5	5			
LOGAN AVENUE	16	16			
PELORUS AVENUE	5	5			
KNIGHTSBRIDGE PLACE	10	10			
HILLARY CRESCENT	17	17			
PRIESTLEY TERRACE	12	12			
CORBETT PLACE	3	3			
WILLOW DRIVE	6	6			
MORGAN AVENUE	7	7			
<b>Right of Way</b>					
CHARLES STREET	11	11			
<b>Grand Total</b>	<b>289</b>	<b>289</b>		<b>1</b>	

There was one lamp discovered with a different lamp type and wattage than recorded in the database. The accuracy of the database is discussed in **section 3.1**.

This clause relates to lights in the field not recorded in the database. There were no additional items of load found in the field.

#### **Audit outcome**

Compliant

### 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**

Any changes that are made during any given month take effect from the beginning of that month. The information is available which would allow for the total load in kW to be retrospectively derived for any day. On 20<sup>th</sup> September 2012, the Authority sent a memo to Retailers and auditors advising that tracking of load changes at a daily level was not required as long as the database contained an audit trail. I have interpreted this to mean that the production of a monthly “snapshot” report is sufficient to achieve compliance.

The database tracks additions and removals as required by this clause.

The processes were reviewed for new lamp connections and the tracking of load changes due to faults and maintenance. All fault and maintenance work is controlled by PSL and conducted by Pope Electrical through “RAMM Contractor”. Once each job is completed the database is updated via field PDA’s. Paperwork is also provided to note materials used, and this is compared with the data in the database for each job. The monthly outage patrols also involve a check of database accuracy. For new subdivisions, NCC engages Opus to record the lighting details in the database. It appears that they are adding items of load but not entering the relevant ICP to ensure the new items are reconciled. This is detailed in **section 2.2** and recorded as non-compliance in **sections 2.1, 2.2, 3.1 and 3.2**.

NCC has had no Christmas lights for the past three years and there are no plans in the future to do this.

#### **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 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	Napier city region
Strata	The database contains items of load in Napier City Council area.  The processes for the management of NCC items of load are the same, but I decided to place the items of load into six strata, as follows:  <ol style="list-style-type: none"><li>1. Amenity lighting</li><li>2. Car park lighting</li><li>3. Rest home lighting</li><li>4. Right of Way lighting</li><li>5. Urban lighting</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 33 sub-units.
Total items of load	289 items of load were checked.

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

##### Audit commentary

A statistical sample of 289 items of load found that the field data was 100.2% of the database data for the sample checked. The statistical sampling tool reported with 95% confidence that the precision of the sample was 0.4% and the true load in the field will be between 100% to 100.4% of the load recorded in the database. This is within the required database accuracy of 2.5%+/-, therefore the database is accurate.

There will be potentially 6,900 kWh per annum (based on annual burn hours of 4,271 as detailed in the DUML database auditing tool) of under submission. The statistical sampling tool reported with 95% confidence the estimated impact will be between zero kWh per annum over submission and 13,900 kWh per annum under submission.

The ballast in RAMM is not correct and is not used for submission. The correct wattages are added in the monthly report. The correct ballasts need to be in the database. This is recorded as non-compliance below.

There is some inaccurate data within the database used to calculate submissions as detailed in the table below. This is recorded as non-compliance and discussed in **section 2.1, 2.4** and **3.2**.

Issue	Volume information impact (annual kWh)
17 items of load with no ICP recorded	803 kWh under submission
40 records have blank or unknown lamp wattages	16,571 kWh under submission estimate per annum based on an average wattage of 97 watts.

**Audit outcome**

Non-compliant

Non-compliance	Description		
<p>Audit Ref: 3.1 With: Clause 15.2 and 15.37B(b)</p> <p>From: 01-May-18 To: 30-Sep-18</p>	<p>The ballasts in RAMM are not used for reconciliation and they are not recorded correctly in RAMM.</p> <p>17 items of load with no ICP resulting in an estimated under submission of 803 kWh per annum.</p> <p>40 items of load recorded with a blank wattage, estimate of 16,571 kWh per annum.</p> <p>Potential impact: Medium Actual impact: Medium Audit history: Once Controls: Moderate Breach risk rating:4</p>		
Audit risk rating	Rationale for audit risk rating		
<p><b>Medium</b></p>	<p>The controls are rated as moderate, because they are sufficient to ensure that changes to the database are correctly recorded most of the time.</p> <p>The impact is assessed to be Medium, based on the kWh differences described above.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>Summaries provided by the third-party contractor PSL do not include null values. Therefore, Genesis was unaware of any missing information. Genesis has requested a RAMM database extraction of the detailed information assisting in identifying any potential data discrepancies. Although the Auditor has outlined that the correct wattages with ballast included are provided in the summary report to the trader which is used for settlement. Genesis will be working with PSL to have the correct information populated in RAMM.</p>		<p>01/06/2019</p>	<p>Investigating</p>
Preventative actions taken to ensure no further issues will occur		Completion date	
<p>Genesis are reviewing the monthly summaries provided by PSL and have requested the RAMM data extraction to verify the information provided by PSL and the values entered by the auditor. This will provide Genesis with an overview of all information assisting in database accuracy improvements.</p>		<p>01/02/2019</p>	



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

#### Code reference

Clause 15.2 and 15.37B(c)

#### Code related audit information

The audit must verify that:

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

#### Audit observation

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

- checking the registry to confirm that the ICP has the correct profile and submission flag
- 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 derived from RAMM and the “burn time” which is sourced from data loggers installed on the Unison network. I checked the accuracy of the submission and found a minor under submission of 8.54 kWh for the month of September 2018 as detailed in the table below:

ICP	Registry Description	GENE kWh volume submitted for Sept 2018	GENE kW value for Sept 2018	Power Solutions wattage report	kW diff between PS report and figure used by GENE	Total kWh calc	kWh diff between calculation using data logger
0000939920HB224	Marine Parade Lighting	352	2.108	2.108	0	354	-1.75
0000939921HBE61	Carriageway Lighting	4370	26.048	26.048	0	4371	-1.21
0000939923HBEE4	Amenity Lighting	910	5.426	5.426	0	911	-0.56
0000939906HBEFE	Road Lighting	262,648	706.527	706.527	0	262651	-2.64
0000939908HBD65	Amenity Lighting	37,019	99.587	99.587	0	37,021	-2.38
TOTAL							-8.54

This equates to an estimated annualised under submission of 102.48 kWh. This is recorded as non-compliance.

The ballast in RAMM is not correct and is not used for submission. The correct wattages are added in the monthly report. This is recorded as non-compliance in **sections 2.4 and 3.1.**

As detailed in **section 3.1**, there is some inaccurate data within the database used to calculate submissions as detailed in **sections 2.2** and **2.4**. This is recorded as non-compliance.

### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 3.2 With: Clause 15.2 and 15.37B(c)  From: 01-May-18 To: 30-Sep-18	Under submission of approximately 102.48kWh annually due to incorrect submission calculation.  Under submission of approximately 116,751kWh for ICP 0000939906HBEFE due to missing items of load in monthly report.  17 items of load with no ICP resulting in an estimated Under submission of 803 kWh per annum.  40 items of load recorded with blank wattage, estimate of 16,571 kWh per annum.  Potential impact: High  Actual impact: High  Audit history: None  Controls: Moderate  Breach risk rating: 6		
Audit risk rating	Rationale for audit risk rating		
High	The controls are rated as moderate, because they are sufficient to ensure that changes to the database are correctly recorded most of the time.  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 have relied on the summary of information provided on behalf of Napier CC, PSL. The summary does not identify individual lamp detail in which Genesis have requested.  Genesis will review their process to verify the auditor's findings of the minor variances found in the submission for Sept-18		01/02/2019	Investigating
Preventative actions taken to ensure no further issues will occur		Completion date	
Genesis want to analyse detailed lamp data to verify information being provided. The analysis will also provide the opportunities for feedback regarding any potential dataset errors.  Genesis will make any relevant changes to the calculation process if found to be in error.		01/02/2019	

## CONCLUSION

This audit found five non-compliances and makes no recommendations. The field audit found the database accuracy was high, but I found a variance in the number of items of load being reconciled vs. the database volumes for one ICP and the submission calculation was marginally different.

Genesis are continuing to work with Unison to resolve the 134 private lights reported in the last audit. If any are confirmed to belong to council, they will have the correct ICP added to them.

The future risk rating of 21 indicates that the next audit be completed in three months but I recommend the next audit be in six months time to allow time for Genesis to work with NCC to correct the matters raised in this audit. The matters raised are detailed below:

## PARTICIPANT RESPONSE

Genesis is requesting longer review period, as the Genesis believes that 3 months is not a true indication of the accuracy of the database. Genesis also confirmed with Napier CC that the private lighting is to be removed from the database. Genesis request a 6-month review to work with PSL and Napier CC to ascertain any items of load that may be missing from the reporting to Genesis.