ELECTRICITY INDUSTRY PARTICIPATION CODE
DISTRIBUTED UNMETERED LOAD AUDIT REPORT

VERITEK

For

PORIRUA CITY COUNCIL
AND GENESIS ENERGY LIMITED

Prepared by: Tara Gannon

Date audit commenced: 5 November 2018

Date audit report completed: 23 November 2018

Audit report due date: 01 December 2018

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EXECUTIVE SUMMARY

This audit of the **Porirua City Council (PCC)** 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.

A RAMM database is managed by PCC in relation to this load. The database is remotely hosted by RAMM Software Ltd.

Field work and new light installations are carried out by Downer, and the recently completed PCC LED upgrade was completed by Northpower and Fulton Hogan. All contractors update the database using Pocket RAMM.

Park lights are managed by the parks team. Historically, changes have not consistently been communicated to the RAMM Technician but improved processes are being put in place.

Past audits have found that some database information is incomplete or inaccurate. PCC had hoped that the LED upgrade would result in much of this incomplete and inaccurate information being replaced prior to this audit. Unfortunately, some database completeness and accuracy issues remain for:

- some lights which have not been upgraded
- some upgraded lights which have incorrect information recorded; the new incorrect information appears to be due to data entry errors, a Pocket RAMM failure for Northpower, and incorrect treatment of some replaced lights as new poles by Downer.

Following the last audit, PCC has undertaken work to cleanse its ICP and owner information. Some discrepancies still remain and are discussed in the body of this report.

Further work is required to improve database accuracy, and PCC is continuing to investigate and resolve issues over time with Genesis' support.

PCC provides monthly reports from RAMM to Genesis, and these reports are used to calculate submission information for ICPs 0000023024WE5D5, 0001255308UN5C4, 0001256873UNFA3, 1001102038UN6D0 and 1001102039UNA95. ICP 1001101874UN586 (Traffic Lights - Transit Mana Esplanade, State Highway 1, Plimmerton) is not recorded in the database. These lights are settled with UNM profile based on the unmetered load details currently recorded on the registry.

The field audit was undertaken of a statistical sample of 305 items of load on 5th November 2018.

The audit found seven non-compliances and makes three recommendations. Potential estimated under submission is occurring this is detailed in **sections 2.1,3.1** and **3.2**.

The future risk rating of 38 indicates that the next audit be completed in three months. The matters raised are detailed below:

AUDIT SUMMARY

NON-COMPLIANCES

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Deriving submission information	2.1	11(1) of Schedule 15.3	Lamps with zero wattage resulting in an estimated 297,744 kWh annual under submission. Lamps with zero gear wattage resulting in an estimated 5,381 kWh annual under submission. 1,695 with incorrect gear wattage recorded resulting in an estimated 13,686 kWh annual over submission. The database accuracy is assessed to be 91.9% of the database for the sample checked indicating a potential over submission of approximately 135,900 kWh per annum. NZTA ICP RAMM database estimated under submission of 253,287 kWh per annum.	Weak	High	9	Investigating
ICP identifier and items of load	2.2	11(2)(a) and (aa) of Schedule 15.3	19 items of load do not have an ICP number recorded.	Moderate	Low	2	Investigating
Location of each item of load	2.3	11(2)(b) of Schedule 15.3	One item of load does not have sufficient location information to enable it to be readily locatable.	Strong	Low	1	Investigating

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Description and capacity of load	2.4	11(2)(b) of Schedule 15.3	28 lights have blanks in all fields containing lamp descriptions. 437 lights have zero lamp wattages recorded. 88 lights have zero gear wattages recorded invalidly.	Moderate	High	6	Investigating
All load recorded in database	2.5	11(2A) of Schedule 15.3	Five additional lamps in the field were not recorded in the database.	Moderate	Low	2	Investigating
Database accuracy	3.1	15.2 and 15.37B(b)	The database contains some inaccurate data.	Weak	High	9	Investigating
Volume information accuracy	3.2	15.2 and 15.37B(c)	Lamps with zero wattage resulting in an estimated 297,744 kWh annual under submission. Lamps with zero gear wattage resulting in an estimated 5,381 kWh annual under submission. 1,695 with incorrect gear wattage recorded resulting in an estimated 13,686 kWh annual over submission. The database accuracy is assessed to be 91.9% of the database for the sample checked indicating a potential over submission of approximately 135,900 kWh per annum. NZTA ICP RAMM database estimated under submission of 253,287 kWh per annum.	Weak	High	9	Investigating
					Future Risk Rating		**38**

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

RECOMMENDATIONS

Subject	Section	Description	Recommendation
ICP identifier and items of load	2.1	Missing ICP numbers	Confirm whether lights with missing ICP numbers and owner of "Private" are being reconciled as standard unmetered load or whether shared unmetered load should be created for these lights.
Database accuracy	3.1	Database accuracy address	Lights with inconsistencies between street addresses and GPS coordinates should have their records updated.
Database accuracy	3.1	Database accuracy – ICP and owner	Check lights with inconsistency between the owner and ICP number and update as necessary.

ISSUES

Subject	Section	Description	Issue
		Nil	

1. ADMINISTRATIVE

1.1. Exemptions from Obligations to Comply with Code

Code reference

Section 11 of Electricity Industry Act 2010.

Code related audit information

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

Audit observation

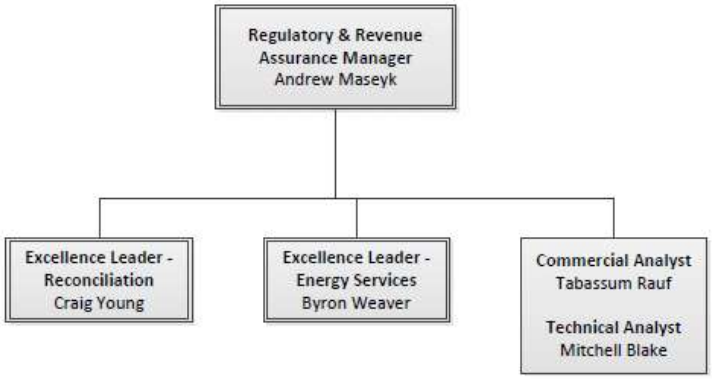
The Electricity Authority's website was reviewed to identify any exemptions relevant to the scope of this audit.

Audit commentary

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

1.2. Structure of Organisation

Genesis provided a copy of their organisational structure.



1.3. Persons involved in this audit

Auditor:

Tara Gannon

Veritek Limited

Electricity Authority Approved Auditor

Other personnel assisting in this audit were:

Name	Title	Company
Craig Young	Excellence Leader - Reconciliation	Genesis Energy
Grace Hawken	Technical Specialist - Reconciliation Team	Genesis Energy
Jane Pearson	RAMM Technician	Porirua City Council

1.4. Hardware and Software

The SQL database used for the management of DUML is remotely hosted by RAMM Software Ltd. The database is commonly known as "RAMM" which stands for "Roading Asset and Maintenance Management".

PCC 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	Profile	Number of items of load	Database wattage (watts)
0000023024WE5D5	STREETLIGHTS, AOTEA DRIVE	RPS	315	24,207
0001255308UN5C4	MASTER ICP PORIRUA CC, HUTT ROAD	CST	3,850	255,153
0001256873UNFA3	PORIRUA CITY STREETLIGHTS – NORTHERN, PAREMATA HAYWARDS ROAD	CST	1,171	76,818
1001102038UN6D0	MASTER ICP TRANSIT, STATE HIGHWAY 1, PUKERUA BAY	CST	99	582
1001102039UNA95	MASTERICP PORIRUA CC, STATE HIGHWAY 1, PUKERUA BAY	CST	330	17,592
Total			**5,784**	**374,987**

No lights are recorded in the database against ICP 1001101874UN586 (Traffic Lights - Transit Mana Esplanade, State Highway 1, Plimmerton). These lights are settled with UNM profile based on the unmetered load details currently recorded on the registry. Genesis will provide further information on these lights to PCC, who will investigate to confirm their details and whether they are recorded against a different ICP in the database.

1.7. Authorisation Received

All information was provided directly by Genesis or PCC.

1.8. Scope of Audit

This audit of the PCC 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.

The scope of the audit encompasses the collection, security and accuracy of the data, including the preparation of submission information.

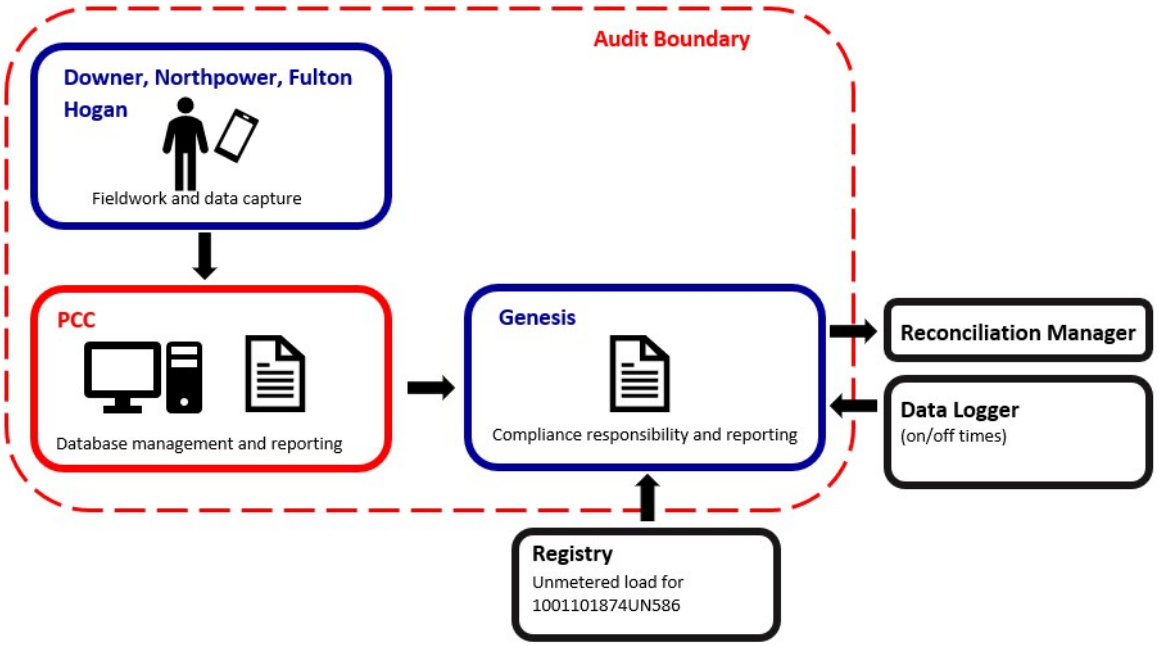
A RAMM database is managed by PCC in relation to this load. The database is remotely hosted by RAMM Software Ltd.

Field work and new light installations are carried out by Downer, and the recently completed PCC LED upgrade was completed by Northpower and Fulton Hogan. All contractors update the database using Pocket RAMM.

Park lights are managed by the parks team. Historically, changes have not consistently been communicated to the RAMM Technician but improved processes are being put in place.

PCC provides monthly reports from RAMM to Genesis, and these reports are used to calculate submission information. ICP 1001101874UN586 (Traffic Lights - Transit Mana Esplanade, State Highway 1, Plimmerton) is not recorded in the database. These lights are settled with UNM profile based on the unmetered load details currently recorded on the registry.

The diagram below shows the audit boundary for clarity.



The field audit was undertaken of a statistical sample of 305 items of load on 5th November 2018.

1.9. Summary of previous audit

The previous audit was completed in December 2017 by Tara Gannon of Veritek Limited. Eight non-compliances were identified, and two recommendations were made. The statuses of the non-compliances and recommendations are described below.

Subject	Section	Clause	Non-compliance	Status
Deriving submission information	2.1	11(1) of Schedule 15.3	Incorrect kW information was used to calculate submission information for some months. Submission against the wrong ICP is occurring for some Aotea subdivision lighting. Under submission is occurring for NZTA lighting.	Still existing ICP data had been updated Still existing
ICP identifier	2.2	11(2)(a) of Schedule 15.3	ICP number is missing for 15 items of load.	Still existing.
Location of each item of load	2.3	11(2)(b) of Schedule 15.3	One item of load does not have sufficient location information in RAMM recorded to confirm its location.	Still existing.
Description of load type	2.4	11(2)(c) & (d) of Schedule 15.3	524 items of load have missing or unknown lamp construction information, and zero lamp wattages.	Still existing.
All load recorded in database	2.5	11(2A) of Schedule 15.3	Five lights were missing from the database, and 73 lights had missing wattage information in the database.	Still existing.
Tracking of load changes	2.6	11(3) of Schedule 15.3	Christmas lighting is not recorded in RAMM.	Cleared. Christmas and decorative lighting will no longer be used.
Database accuracy	3.1	15.2	The database contains some inaccurate information.	Still existing.
Submission accuracy	3.2	15.2	Incorrect kW information was used to calculate submission information for some months. Submission against the wrong ICP is occurring for some Aotea subdivision lighting. Under submission is occurring for NZTA lighting.	Still existing ICP data had been updated Still existing

Subject	Section	Clause	Recommendation	Status
Deriving submission information	2.1	Use up to date wattage information for submission	Use PCC RAMM database once it is confirmed as accurate and complete.	Implemented
Description of load type	2.4	Accuracy of ballast wattages	Check the accuracy of ballast wattages once this information is available.	Some ballast discrepancies still exist.

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

Code reference

Clause 16A.26 and 17.295F

Code related audit information

Retailers must ensure that DUML database audits are completed:

1. *by 1 June 2018 (for DUML that existed prior to 1 June 2017)*
2. *within three months of submission to the reconciliation manager (for new DUML)*
3. *within the timeframe specified by the Authority for DUML that has been audited since 1 June 2017.*

Audit observation

Genesis have requested Veritek to undertake this streetlight audit.

Audit commentary

This audit report confirms that the requirement to conduct an audit has been met for this database within the required timeframe.

Audit outcome

Compliant

2. DUML DATABASE REQUIREMENTS

2.1. Deriving submission information (Clause 11(1) of Schedule 15.3)

Code reference

Clause 11(1) of Schedule 15.3

Code related audit information

The retailer must ensure the:

- *DUML database is up to date*
- *methodology for deriving submission information complies with Schedule 15.5.*

Audit observation

The process for calculation of consumption was examined and the application of profiles was checked. The database was checked for accuracy.

Audit commentary

Genesis reconciles this DUML load based on RAMM extracts provided by PCC monthly and night hours or data logger hours as described in the table below.

ICP Number	Description	Profile	On hours based on
0000023024WE5D5	STREETLIGHTS, AOTEA DRIVE	RPS	Night hours
0001255308UN5C4	MASTER ICP PORIRUA CC, HUTT ROAD	CST	Data logger on hours
0001256873UNFA3	PORIRUA CITY STREETLIGHTS – NORTHERN, PAREMATA HAYWARDS ROAD	CST	Data logger on hours
1001102038UN6D0	MASTER ICP TRANSIT, STATE HIGHWAY 1, PUKERUA BAY	CST	Data logger on hours
1001102039UNA95	MASTERICP PORIRUA CC, STATE HIGHWAY 1, PUKERUA BAY	CST	Data logger on hours

ICP 1001101874UN586 is not recorded in the database and is under investigation to determine whether it should be added as discussed in **section 1.6**. It is settled with UNM profile, based on the registry daily unmetered load of 84 kWh per day.

Because there are some missing and incorrect lamp and gear wattages recorded in RAMM, Genesis reviews and updates the PCC and privately owned light data prior to submission:

1. Sodium lamps with zero gear wattage are updated to default gear values.
2. Lamps with zero lamp wattage are updated to 150W. If there is sufficient information in the model fields to determine they are likely to be LEDs, the gear wattage is populated with zero, otherwise default gear wattage for a 150 W sodium lamp is applied.

I recalculated the submissions for September 2018 for all five ICPs using the on hours and Genesis adjusted database information, and for ICP 1001101874UN586 using the registry daily unmetered kWh. I confirmed that the submission information was calculated correctly.

Volume inaccuracy is present as follows:

Issue	Estimated volume information impact (annual kWh)
Lamp wattages of zero were recorded for 437 lights (7.6%). 419 of these were lights with missing, incomplete or unknown light descriptions and the correct wattage could not be confirmed. There was sufficient model information to establish the wattages of 53 of these lights.	Estimated 297,774[1] kWh of under submission
Gear wattages of zero were invalidly recorded for 88 lights.	5,381[2] kWh of under submission
1,695 lights had incorrect gear wattages recorded in the database.	13,868[3] kWh of over submission
Potential over submission due to database inaccuracy (excluding the NZTA stratum)	135,900[4] kWh of over submission
Potential over submission due to database inaccuracy for the NZTA stratum.	253,287[5] kWh under submission

The RAMM extract is adjusted by Genesis to populate missing lamp wattage and unexpected zero gear wattage information with default values. While these values may not be accurate in all cases, they are expected to improve the accuracy of the data. None of the adjusted lights were included in the sample so I could not confirm whether the adjustments were correct.

Audit outcome

Non-compliant

[1] Based on all 419 lights having the same average wattage as the 53 where the wattage could be determined from other model information recorded in the database.
[2] Estimated combined gear wattage of 1,260 W with annual burn hours of 4,271 as detailed in the DUML database auditing tool
[3] 3,247 W with annual burn hours W with annual burn hours of 4,271 as detailed in the DUML database auditing tool
[4] The database accuracy (excluding the NZTA stratum) is assessed to be 91.1% indicating potential over submission of 135,900 kWh per annum kWh per annum (based on annual burn hours of 4,271 as detailed in the DUML database auditing tool).
[5] Assuming a 150W wattage for the 353 items with zero wattage, with annual burn hours of 4,271 as detailed in the DUML database auditing tool

Non-compliance	Description
Audit Ref: 2.1 With: Clause 11(1) of Schedule 15.3 From: 01-Jan-18 To: 05-Nov-18	Lamps with zero wattage resulting in an estimated 297,744 kWh annual under submission. Lamps with zero gear wattage resulting in an estimated 5,381 kWh annual under submission. 1,695 with incorrect gear wattage recorded resulting in an estimated 13,686 kWh annual over submission. The database accuracy is assessed to be 91.9% of the database for the sample checked indicating a potential over submission of approximately 135,900 kWh per annum. NZTA ICP RAMM database estimated under submission of 253,287 kWh per annum. Potential impact: High Actual impact: Unknown Audit history: Three times Controls: Weak Breach risk rating: 9
Audit risk rating	**Rationale for audit risk rating**
High	The controls over the database are rated as weak, due to the large number of discrepancies identified during the field count and analysis of the RAMM database extract. The audit risk rating is high based on kWh variances detailed above. Genesis' pre submission adjustments help to reduce the potential net under submission.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis Energy has been proactive and have visited PCC 17/10/2018 to work through the issues that Genesis were seeing with their database (RAMM). PCC were very aware the information wasn't accurate, Genesis has suggested potential solutions for PCC to meet the requirements of database accuracy. PCC have rejected those pathways. Genesis are aware that they are potentially over billing/Settling however without the required information Genesis can only bill on what is provided. Monthly, Genesis has had to adjust the information provided to ensure lamp and gear wattages are included in the billing/settlement processes. Genesis are aware that there is LED lighting in the field that is not recorded in the RAMM database due to pocket Ramm failure. ICP 1001101874UN586 (Traffic Lights - Transit Mana Esplanade, State Highway 1, Plimmerton) are traffic lights	01/03/2019	Investigating

and PCC have confirmed they do not on charge NZTA for those. They only manage "Streetlighting" Genesis will need to contact NZTA and work with that entity to confirm/validate traffic lighting for ICP 1001101874UN586.		
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis has visited with PCC to ensure they know their obligations regarding Streetlighting. It seems resourcing is the main reason for data incompleteness. Genesis have been very proactive in working with PCC and will continue. PCC have stated they will attend to the database updates where the pocket Ramm failed. This is a manual data input which will require PCC to complete.	01/03/2019	

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

ICP numbers are populated for 5765 (99.7%) of the 5784 items of load. There are 19 items of load with missing ICP numbers, which are recorded as non-compliance below.

Street	Count of items with missing ICPs	Owner
DURHAM STREET	1	Porirua City Council
MUNGAVIN AVENUE	2	Porirua City Council
MURI ROAD	2	Porirua City Council
SCHOONER DRIVE	6	Private
YORKSHIRE CLOSE	4	Private
WEATHERDECK CLOSE	3	Private
HALL ROAD	1	Private

Street	Count of items with missing ICPs	Owner
Total	**19**	**Unknown**

I recommend that PCC liaise with Wellington Electricity to confirm whether the private lights are being reconciled as standard unmetered load, or whether shared unmetered load should be created for these lights.

Description	Recommendation	Audited party comment	Remedial action
Missing ICP numbers	Confirm whether lights with missing ICP numbers and owner of "Private" are being reconciled as standard unmetered load or whether shared unmetered load should be created for these lights.	PCC have confirmed that the private lighting is not the council's responsibility and will remove it from the data provided.	Identified

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.2 With: Clause 11(2)(a) and (aa) of Schedule 15.3 From: 01-Jan-18 To: 05-Nov-18	19 items of load do not have an ICP number recorded. Potential impact: Low Actual impact: Low Audit history: Three times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as moderate because almost all items of load have an ICP number recorded. The impact is rated as low, as a very small number of items of load are affected.

Actions taken to resolve the issue	Completion date	Remedial action status
Private light (14) items are private lighting where the council has relinquished the responsibility for the load. Changes to the reporting will begin. The 5 Items with no ICP will be investigated. Genesis are in communication with PCC regarding their compliance requirements.	01/03/2019	Investigating

Preventative actions taken to ensure no further issues will occur	Completion date	
Genesis are taking a proactive approach working alongside the council to find solutions for the non-compliances.	01/03/2019	

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 DUML database must contain the location of each DUML item.

Audit observation

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

Audit commentary

The database contains fields for the street address and also GPS coordinates.

GPS coordinates are populated for 5765 (99.7%) of the 5784 items of load. 19 items of load do not have GPS coordinates. Of those:

- two have sufficient house address, offset and road side information to enable them to be readily located
- 16 have sufficient street, offset, and road side information to enable them to be readily located
- one does not have sufficient house address or other location information to allow it to be readily locatable, as shown below:

House Address	Pole Number	Side	Offset	Northing	Easting
JOHN BURKE DRIVE		Unknown	0	0	0

Accuracy of locations is discussed in **section 3.1.**

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.3 With: Clause 11(2)(b) of Schedule 15.3 From: 01-Jan-18 To: 05-Nov-18	One item of load does not have sufficient location information to enable it to be readily locatable. Potential impact: Low Actual impact: Low Audit history: Three times Controls: Strong Breach risk rating: 1

Audit risk rating	Rationale for audit risk rating
Low	Controls are rated as strong and the impact as low, because only one exception was identified.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis will proactively approach PCC to find the missing information pertaining to these assets.	01/03/2019	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis are taking a proactive approach working alongside the council to find solutions for the non-compliances.	01/03/2019	

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 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

Lamp description information is contained within the lamp make model field, and four other model fields. 28 lights have blanks in all five fields containing lamp description information, this is recorded as non-compliance below.

All lamps have a gear wattage and lamp wattage recorded, but some were invalidly recorded as zero.

- Lamp wattages of zero were recorded for 437 lights (7.6%). 419 of these were the lights with missing, incomplete or unknown lamp descriptions above. In most cases there was insufficient lamp description information to confirm the type of light likely to be installed, but I identified one possible 70 W sodium light and 52 possible 150 W sodium lights with an expected combined wattage of 8,819 W. Assuming all 419 lights have the same average wattage as the 53 where the wattage could be determined, there will be an estimated 297,774 kWh of under submission per annum based on annual burn hours of 4,271 as detailed in the DUML database auditing tool.
- Gear wattages of zero were invalidly recorded for 88 lights with an estimated combined gear wattage of 1,260 W (or 5,381 kWh of under submission based on 4,271 annual burn hours).

Lamp make model	Count of lights with zero gear	Expected gear wattage	Total gear wattage in database	Total gear wattage expected
PHIL (100T, 100 watts)	1	14	-	14
PHIL (150T, 150 watts)	11	12	-	132
PHIL (250I, 250 watts)	2	28	-	56
PHIL (250T, 250 watts)	6	25	-	150
PHIL (36T, 36 watts)	1	6	-	6
PHIL (40M, 400 watts)	2	25	-	50
PHIL (50M, 50 watts)	1	9	-	9
PHIL (70T, 70 watts)	55	13	-	715
PHIL (75N, 75 watts)	6	13	-	78
PHIL (MH15, 36 watts)	2	18	-	36
UNKN (FL50, 58 watts)	1	14	-	14
Total	**88**		**-**	**1,260**

Accuracy where lamp description and wattage information is populated is discussed in **section 3.1**.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.4 With: Clause 11(2)(b) of Schedule 15.3 From: 01-Jan-18 To: 05-Nov-18	28 lights have blanks in all fields containing lamp descriptions. 437 lights have zero lamp wattages recorded. 88 lights have zero gear wattages recorded invalidly. Resulting in an estimated under submission of 297,744 kWh Potential impact: High Actual impact: High Audit history: Three times Controls: Moderate Breach risk rating: 6
Audit risk rating	**Rationale for audit risk rating**
High	The controls are rated as moderate because most lamps have description and wattage information recorded but there is room for improvement. PCC has been working to populate the missing information. The audit risk rating is high based on kWh impact on kWh.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis has visited with PCC to ensure they know their obligations regarding Streetlighting. It seems resourcing is the main reason for data incompleteness. Genesis have been very proactive in working with PCC and will continue. PCC have stated they will attend to the database updates to information populated in RAMM.	01/03/2019	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis will endeavour to work with PCC to have their currently populated data brought up to date, correcting any null required values	01/03/2019	

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 305 items of load on 5 November 2018. The sample was selected from seven strata:

- GWRC, NZRC and WE
- NZTA
- PCC 0000023024WE5D5
- PCC 0001255308UN5C4
- PCC 0001256873UNFA3
- PCC parks and property
- Private, school and unknown.

Audit commentary

The field audit findings for the sample of lamps are detailed in the table below:

Address	Database Count	Field Count	Count differences	Wattage differences	Comments
GWRC, NZRC and WE					
Paremata Crescent	4	4	-	-	

Address	Database Count	Field Count	Count differences	Wattage differences	Comments
NZTA					
SH1	14	14	-	-	All lamps match the description expected but were recorded with 0 wattage in the database.
PCC 0000023024WE5D5					
KAWEKA CLOSE	5	5	-	-	
KEN DOUGLAS DRIVE	4	4	-	-	
LINDA BURKE WAY	2	2	-	-	
MILLFORD STREET	4	4	-	-	
WANGAPEKA WAY	5	5	-	-	
PCC 0001255308UN5C4					
AWARUA STREET	20	19	-1	18	18 LEDs were recorded as HPS in the database. One less light found in the field.
BANKS BOULEVARD	13	15	2	-	Two additional LEDs found in the field.
BOSUN TERRACE	10	10	-	1	One LED was recorded with a different wattage to what was present in the street.
BOWLINE PLACE	4	4	-	3	Three LEDs were recorded as 70S in the database.
BRIAN PLACE	2	2	-	-	
BROKEN HILL	17	17	-	-	
CHAFFEY CRESCENT	8	8	-	-	
DERBY PLACE	4	4	-	1	One LED was recorded with a different wattage to what was present in the street.
ERNEST STREET	11	11	-	1	One LED was recorded with a different wattage to what was present in the street.

Address	Database Count	Field Count	Count differences	Wattage differences	Comments
FANTAME STREET	13	13	-	1	One LED was recorded with a different wattage to what was present in the street.
FURNEAUX GROVE	8	5	-3	-	Three LEDs not found in the field.
MEXTED CRESCENT	8	8	-	1	One LED light was recorded with a different wattage to what was present in the street.
NIBLICK LANE	4	4	-	-	
PORTAGE PLACE	5	7	2	2	One LED was recorded as 250 MV in the database. One LED was recorded as 50 MV in the database. Two additional LEDs were found in the field.
ROSE ST CULDESAC	2	2	-	-	
ROSE STREET	8	8	-	-	
SPY GLASS LANE	20	18	-2	-	Two LEDs lights were not found in the field.
TANGARE DRIVE	12	12	-	-	
THE SOUNDING	5	5	-	2	Two LED lights were recorded as 70S in the database.
THE YARDARM	4	4	-	4	Four LED lights were recorded as 70S in the database.
VOYAGER WAY	4	4	-	-	
PCC 0001256873UNFA3					
DOON GROVE	3	3	-	-	
DORNOCH PLACE	4	4	-	-	
FINDHORN PLACE	4	4	-	-	
OAK AVENUE	9	9	-	9	Nine LED lights were recorded as 70E or 150S in the database.
PAREMATA DRIVE	16	16	-	-	
TWEED ROAD	19	19	-	19	19 LED lights were recorded as 70S or 100T in the database.

Address	Database Count	Field Count	Count differences	Wattage differences	Comments
PCC parks and property					
GEAR TERRACE	9	9	-	1	One LED was recorded with a different wattage to what was present in the street.
Private, school and unknown					
BOTANY LANE	5	6	1	5	Five LED lights were recorded as 70S in the database. One additional LED found in the field.
TUTUIRA PLACE	12	12	-	-	
YORKSHIRE CLOSE	4	4	-	-	
Total	**305**	**304**	**11**	**64**	

This clause relates to lights in the field that are not recorded in the database. The field audit found five additional lights. This is recorded as non-compliance.

The count differences where lights were present in the database but not recorded in the field, and wattage differences are 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: unknown To: 05-Nov-18	Five additional lamps in the field but were not recorded in the database. Potential impact: Low Actual impact: Unknown Audit history: Three times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as moderate, as they are sufficient to ensure most lights are recorded in the database. The impact is unknown but is rated as low, as less than 22 lights were missing from the database.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis Energy has been proactive and have visited PCC 17/10/2018 to work through the issues that Genesis were seeing with their database (RAMM). PCC were very aware the information wasn't accurate, Genesis has suggested potential solutions for PCC to meet the requirements of database accuracy. PCC have rejected those pathways. Genesis are aware that they are potentially over billing/Settling however without the required information Genesis can only bill on what is provided. Genesis are aware that there is LED lighting in the field that is not recorded in the RAMM database due to pocket Ramm failure.	01/03/2019	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis has visited with PCC to ensure they know their obligations regarding Streetlighting. It seems resourcing is the main reason for data incompleteness. Genesis have been very proactive in working with PCC and will continue. PCC have stated they will attend to the database updates where the pocket Ramm failed. This is a manual data input which will require PCC to complete.	01/03/2019	

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

On 20th 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 process to add new streetlights was examined. New connections cannot be connected without approval from PCC. Lights are recorded in the database as private until they are vested in Council, and then ownership changes to PCC. No issues with new connections were identified during the audit.

PCC's engineers are aware of the requirement to ensure that the trader's agreement is given prior to any new unmetered load ICPs being created.

Field work and new light installations are carried out by Downer, and the recently completed PCC LED upgrade was completed by Northpower and Fulton Hogan. All contractors update the database using Pocket RAMM.

There have been some issues with RAMM updates during the audit period, and PCC was in the process of resolving these prior to the audit:

Issue	Resolution	Impact
During the LED upgrade, Northpower experienced a Pocket RAMM failure, which resulted in some updates being lost before Pocket RAMM was synchronised to the main database.	PCC are working through database extracts of PCC non LED lights and installation paperwork to identify the affected lights and update RAMM.	It is expected that almost all PCC roading lights will now be replaced with LEDs, apart from some lights in the Aotea subdivision which are recorded under ICP 0000023024WE5D5. I identified 1,861 lights connected to PCC roading ICPs 0001255308UN5C4 or 0001256873UNFA3 which were not LEDs. During the field audit I found some streets that appear to be affected by this issue where wattage differences are caused by LEDs missing from the database and sodium lamps are missing from the street. These differences are documented in **section 2.5**.
Where Downer replaced a light on a pole, they would add a new pole in RAMM instead of replacing the light on the existing pole. This was identified when PCC found that the number of poles installed by Downer was larger than expected when reviewing new additions to RAMM.	This has been resolved with Downer, and PCC is working through identifying duplicate poles and updating RAMM.	The impact is difficult to quantify. I confirmed during the field audit that some poles genuinely have two lights.
Park lights are managed by the parks team, and changes to these lights are not consistently communicated to the RAMM Technician. This can lead to some RAMM discrepancies.	The RAMM and Parks teams intend to work together to resolve discrepancies for parks lights, and put processes in place to communicate changes.	Unknown, but no issues were found for the sample of parks lights checked in **section 2.5**.

PCC validates the data entered in RAMM by reviewing the number and types of changes made in RAMM compared to the expected values each month, and invoice data provided by the contractors.

The previous audit found that festive and decorative lights were not included in RAMM. PCC has decided to cease using these lights. I confirmed that decorative lights were not connected on 14/11/18, by checking poles in the Porirua city centre when street lights connected to the same poles were on. The sample checked included Parumoana St, Lyttleton Ave, and Titahi Bay Road.

Private lights are recorded in the database. PCC are working with Wellington Electricity to ensure that unmetered load for these ICPs is correctly recorded.

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	PCC street lights in the Porirua area
Strata	The databases contain 5,784 items of load in the PCC area. The processes for the management of all PCC items of load is the same. I selected the following strata: • GWRC, NZRC and WE • NZTA • PCC 0000023024WE5D5 • PCC 0001255308UN5C4 • PCC 0001256873UNFA3 • PCC parks and property • Private, school and unknown.
Area units	I created a pivot table of the roads in each database and used a random number generator in each spreadsheet to select a total of 38 sub-units.
Total items of load	305 items of load were checked.

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

Audit commentary

Database accuracy based on the field audit, excluding the NZTA stratum

The field data was 91.1% of the database data for the sample checked, excluding the NZTA stratum (this is discussed separately below). The statistical sampling tool reported with 95% confidence the precision of the sample was 15% and the true load in the field will be between 82.6% to 97.6% of the load recorded in the database. The sample is not sufficiently precise to be able to determine the database accuracy but indicates that the database is likely to be over submitting.

The tool indicated that there is potentially 135,900 kWh per annum (based on annual burn hours of 4,271 as detailed in the DUML database auditing tool) of over submission. The statistical sampling tool reported with 95% confidence that the possible impact will be between 36,500 and 265,900 kWh per

annum over submission. The differences largely appear to be due to differences between what is recorded in the database and present in the streets, and wattage discrepancies.

140 (46%) of the 305 lights checked were installed during 2018 according to the database extract, including new streets, extensions to existing streets, and lights replaced as part of the LED upgrade project. I found that some other lights had also been recently replaced, but where not updated in the database. Because such a large proportion of lights are new, accuracy for new lights was assessed as part of the overall sample.

Database accuracy based on the field audit for the NZTA stratum

A sample of 14 lights were checked for the NZTA stratum, and I found that the lights in the field were consistent with the lamp description information recorded in the database.

The 14 lamps were recorded in the database with 0 lamp wattage and 0 gear wattage, and the expected wattage based on the field audit was 2352 W. An accuracy percentage cannot be calculated because the database wattage is zero, creating a calculation error.

The NZTA stratum contained 428 lights in total. Of those 353 (82.5%) had a zero lamp wattage recorded, and 362 (84.6%) had a zero gear wattage recorded. For most of these lights model information was incomplete, and I was unable to ascertain the correct wattages. Assuming a 150W wattage for the 353 items with zero wattage this will be resulting in a potential annual under submission of 253,287 kWh.

Lamp description accuracy

Along with the 28 lights which have blanks in all five fields containing lamp description information discussed in **section 2.4**, a further 391 lights have incomplete or unknown description information. The majority of these lights (353) are owned by NZTA, with the balance owned privately or by PCC.

Lamp Make Model	Count of lights
Blank	28
CREE	3
PHIL	5
SCHR	1
UNK	2
UNK (UNK, 0 watts)	331
UNKN (UNK, 0 watts)	38
XEN	28
Grand Total	**419**

Lamp wattage accuracy

Where recorded, lamp wattages were found to be accurate. Zero lamp wattages are recorded as non-compliance in **section 2.4.**

Gear wattage accuracy

All lamps in the database have a gear wattage populated. The gear wattage value was checked against the published standardised wattage table for the lamp make model listed, to confirm whether wattages were as expected.

I found 1,695 lights had incorrect gear wattages recorded in the database, resulting in estimated under submission of 3,247 W (or 13,868 kWh of over submission based on 4,271 annual burn hours). Invalid zero gear wattages are recorded as non-compliance in **section 2.4.**

Lamp make model	Gear wattage in database										Expected gear wattage	Total gear wattage in database	Total gear wattage expected	Gear wattage difference
	4	9	12	16	17	18	20	28	28.4	Total				
ITAL (ITA1, 20 watts)			2							2	0	24	-	- 24
PHIL (100E, 100 watts)			17							17	10	204	170	- 34
PHIL (100I, 100 watts)			1							1	14	12	14	2
PHIL (100T, 100 watts)			50							50	14	600	700	100
PHIL (150E, 150 watts)						9				9	10	162	90	- 72
PHIL (150T, 150 watts)						360				360	12	6,480	4,320	- 2,160
PHIL (20L, 20 watts)	1									1	0	4	-	- 4
PHIL (250I, 250 watts)										0	28	-	-	-
PHIL (250T, 250 watts)						2		258		260	25	7,260	6,500	- 760
PHIL (36T, 36 watts)										0	6	-	-	-
PHIL (40M, 400 watts)		1								1	25	9	25	16
PHIL (50M, 50 watts)			2							2	9	24	18	- 6
PHIL (70E, 70 watts)			132							132	7	1,584	924	- 660
PHIL (70I, 70 watts)			9							9	13	108	117	9
PHIL (70T, 70 watts)			816							816	13	9,792	10,608	816
PHIL (75N, 75 watts)			9							9	13	108	117	9
PHIL (MH15, 36 watts)										0	18	-	-	-
SCHR (T26W, 26 watts)		1	2							3	0	33	-	- 33
UNKN (100E, 100 watts)			1							1	10	12	10	- 2
UNKN (70E, 70 watts)			1							1	7	12	7	- 5
UNKN (FL50, 58 watts)										0	14	-	-	-
UNKN (MH70, 70 watts)			1							1	13	12	13	1
VZ (1500, 16 watts)				7						7	0	112	-	- 112
VZ (2980, 28.4 watts)									9	9	0	256	-	- 256
XEN			1							1	0	12	-	- 12
XEN (10, 160 watts)							3			3	0	60	-	- 60
Total										1695		**26,880**	**23,633**	- **3,247**

Address accuracy

When plotting GPS coordinates for the field sample, I found:

- three lights with GPS locations on Banks Blvd were labelled Furneaux Grove.
- two lights with GPS locations on Lead Line Place were labelled Spy Glass Lane.

During the field audit I found that these lights were present at their GPS locations. I recommend that the addresses are updated to be consistent with the locations.

Description	Recommendation	Audited party comment	Remedial action
Database accuracy – address	Lights with inconsistencies between street addresses and GPS coordinates should have their records updated.	Genesis will advise PCC of these errors and request this data to be reviewed.	Identified

ICP number and owner accuracy

PCC has undertaken work to cleanse owner and ICP information.

Some lights still appear to have inconsistency between the owner and ICP information, including the lights shaded in red below:

Road name	Owner name	Transit Pukerua Bay 1001102038UN6D0	MASTER ICP PORIRUA CC PUKERUA BAY 1001102039UNA95
STATE HIGHWAY NO. 1	New Zealand Transport Agency	52	175
	Porirua City Council	1	0
STATE HIGHWAY NO. 1 (Bridge south of Paekakariki)	New Zealand Transport Agency	0	1

I recommend that these lights are checked to confirm the correct owner and ICP and updated as necessary.

Description	Recommendation	Audited party comment	Remedial action
Database accuracy – ICP and owner	Check lights with inconsistency between the owner and ICP number and update as necessary.	Genesis will advise PCC of these errors and request this data to be reviewed.	Identified

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.1 With: Clause 15.2 and 15.37B(b) From: 01-Jan-18 To: 05-Nov-18	391 lights have incomplete or unknown description information. 1,695 lights had incorrect gear wattages recorded in the database, resulting in estimated under submission of 3,247 W (or 13,868 kWh of over submission based on 4,271 annual burn hours). The database accuracy (excluding the NZTA stratum) is assessed to be 91.1% indicating potential over submission of 135,900 kWh per annum kWh per annum. The database accuracy for the NZTA stratum could not be accurately calculated because the database wattage is recorded as zero for the sample checked. Assuming a 150W wattage for the 353 items with zero wattage this will be resulting in a potential annual under submission of 253,287 kWh. Potential impact: High Actual impact: Unknown Audit history: Three times Controls: Weak Breach risk rating: 9

Audit risk rating	Rationale for audit risk rating
High	The controls over the database are rated as weak, due to the large number of discrepancies identified during the field count and analysis of the RAMM database extract. The audit risk rating is high based on kWh variances detailed above. Genesis' pre-submission adjustments help to reduce the potential net under submission.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis are aware that they have potential billing/Settling inaccuracies, however Genesis can only bill on what is provided. Monthly, Genesis has had to adjust the information provided to ensure lamp and gear wattages are included/excluded and make assumptions in the billing/settlement processes. Genesis visited PCC 17/10/2018 to discuss these issues which were relatively unresolved upon conclusion.	01/03/2019	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis has visited with PCC to ensure they now their obligations regarding Streetlighting. It seems resourcing is the main reason for data incompleteness. Genesis have been proactive in working with PCC and this will continue. PCC have stated they will attend to the database updates where the pocket Ramm failed. This is a manual data input which will require PCC to complete. Genesis will provide this audit to PCC to make comments on how PCC could improve database accuracy.	01/03/2019	

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 on hours against the submitted figure to confirm accuracy.

Audit commentary

Genesis reconciles this DUML load based on RAMM extracts provided by PCC monthly and night hours or data logger hours as described in the table below.

ICP Number	Description	Profile	On hours based on
0000023024WE5D5	STREETLIGHTS, AOTEA DRIVE	RPS	Night hours
0001255308UN5C4	MASTER ICP PORIRUA CC, HUTT ROAD	CST	Data logger on hours
0001256873UNFA3	PORIRUA CITY STREETLIGHTS – NORTHERN, PAREMATA HAYWARDS ROAD	CST	Data logger on hours
1001102038UN6D0	MASTER ICP TRANSIT, STATE HIGHWAY 1, PUKERUA BAY	CST	Data logger on hours
1001102039UNA95	MASTERICP PORIRUA CC, STATE HIGHWAY 1, PUKERUA BAY	CST	Data logger on hours

ICP 1001101874UN586 is not recorded in the database and is under investigation to determine whether it should be added as discussed in **section 1.6**. It is settled with UNM profile, based on the registry daily unmetered load of 84 kWh per day.

Because there are some missing and incorrect lamp and gear wattages recorded in RAMM, Genesis reviews and updates the PCC and privately owned light data prior to submission:

1. Sodium lamps with zero gear wattage are updated to default gear values.
2. Lamps with zero lamp wattage are updated to 150W. If there is sufficient information in the model fields to determine they are likely to be LEDs, the gear wattage is populated with zero, otherwise default gear wattage for a 150 W sodium lamp is applied.

I recalculated the submissions for September 2018 for all five ICPs using the on hours and Genesis adjusted database information, and for ICP 1001101874UN586 using the registry daily unmetered kWh. I confirmed that the submission information was calculated correctly.

Volume inaccuracy is present as follows:

Issue	Estimated volume information impact (annual kWh)
Lamp wattages of zero were recorded for 437 lights (7.6%). 419 of these were lights with missing, incomplete or unknown light descriptions and the correct wattage could not be confirmed. There was sufficient model information to establish the wattages of 53 of these lights.	Up to 297,774[6] kWh of under submission
Gear wattages of zero were invalidly recorded for 88 lights.	5,381[7] kWh of under submission
1,695 lights had incorrect gear wattages recorded in the database.	13,868[8] kWh of over submission
Potential over submission due to database inaccuracy (excluding the NZTA stratum)	135,900[9] kWh of over submission
Potential over submission due to database inaccuracy for the NZTA stratum.	253,287[10] kWh under submission

The RAMM extract is adjusted by Genesis to populate missing lamp wattage and unexpected zero gear wattage information with default values. While these values may not be accurate in all cases, they are expected to improve the accuracy of the data. None of the adjusted lights were included in the sample so I could not confirm whether the adjustments were correct.

Audit outcome

Non-compliant

[6] Based on all 419 lights having the same average wattage as the 53 where the wattage could be determined from other model information recorded in the database.
[7] Estimated combined gear wattage of 1,260 W with annual burn hours of 4,271 as detailed in the DUML database auditing tool
[8] 3,247 W with annual burn hours W with annual burn hours of 4,271 as detailed in the DUML database auditing tool
[9] The database accuracy (excluding the NZTA stratum) is assessed to be 91.1% indicating potential over submission of 135,900 kWh per annum kWh per annum (based on annual burn hours of 4,271 as detailed in the DUML database auditing tool).
[10] Assuming a 150W wattage for the 353 items with zero wattage, with annual burn hours of 4,271 as detailed in the DUML database auditing tool

Non-compliance	Description
Audit Ref: 3.2 With: Clause 15.2 and 15.37B(c) From: 01-Jan-18 To: 05-Nov-18	Lamps with zero wattage resulting in an estimated 297,744 kWh annual under submission. Lamps with zero gear wattage resulting in an estimated 5,381 kWh annual under submission. 1,695 with incorrect gear wattage recorded resulting in an estimated 13,686 kWh annual over submission. The database accuracy is assessed to be 91.9% of the database for the sample checked indicating a potential over submission of approximately 135,900 kWh per annum. NZTA ICP RAMM database estimated under submission of 253,287 kWh per annum. Potential impact: High Actual impact: Unknown Audit history: Three times Controls: Weak Breach risk rating: 9
Audit risk rating	**Rationale for audit risk rating**
High	The controls over the database are rated as weak, due to the large proportion of discrepancies identified during the field count and analysis of the RAMM database extract. The audit risk rating is high based on kWh variances detailed above. Genesis' pre submission adjustments help to reduce the potential net under submission.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis has visited with PCC to ensure they now their obligations regarding Streetlighting. It seems resourcing is the main reason for data incompleteness. Genesis have been very proactive in working with PCC and will continue. PCC have stated they will attend to the database updates to information populated in RAMM.	01/03/2019	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis will endeavour to work with PCC to have their currently populated data brought up to date, correcting any null required values	01/03/2019	

CONCLUSION

A RAMM database is managed by PCC in relation to this load. The database is remotely hosted by RAMM Software Ltd.

Field work and new light installations are carried out by Downer, and the recently completed PCC LED upgrade was completed by Northpower and Fulton Hogan. All contractors update the database using Pocket RAMM.

Park lights are managed by the parks team. Historically, changes have not consistently been communicated to the RAMM Technician but improved processes are being put in place.

Past audits have found that some database information is incomplete or inaccurate. PCC had hoped that the LED upgrade would result in much of this incomplete and inaccurate information being replaced prior to this audit. Unfortunately, some database completeness and accuracy issues remain for:

- some lights which have not been upgraded.
- some upgraded lights which have incorrect information recorded; the new incorrect information appears to be due to data entry errors, a Pocket RAMM failure for Northpower, and incorrect treatment of some replaced lights as new poles by Downer.

Following the last audit, PCC has undertaken work to cleanse its ICP and owner information. Some discrepancies still remain and are discussed in the body of this report.

Further work is required to improve database accuracy, and PCC is continuing to investigate and resolve issues over time with Genesis' support.

PCC provides monthly reports from RAMM to Genesis, and these reports are used to calculate submission information for ICPs 0000023024WE5D5, 0001255308UN5C4, 0001256873UNFA3, 1001102038UN6D0 and 1001102039UNA95. ICP 1001101874UN586 (Traffic Lights - Transit Mana Esplanade, State Highway 1, Plimmerton) is not recorded in the database. These lights are settled with UNM profile based on the unmetered load details currently recorded on the registry.

The field audit was undertaken of a statistical sample of 305 items of load on 5th November 2018.

The audit found seven non-compliances and makes three recommendations. Potential estimated under submission is occurring.

The future risk rating of 38 indicates that the next audit be completed in three months.

PARTICIPANT RESPONSE

Genesis has been working with PCC since gaining PCC in April 2018. Based off an audit conducted whilst ownership was with Meridian, Genesis has managed to make small incremental improvements. PCC originally were conducting an internal review and started to provide Genesis with RAMM detailed extractions upon request, where Genesis identified data irregularities in which PCC were addressing. Genesis have visited and have been in communication with PCC. Genesis understands its requirements under the DUML guidelines, however Genesis is also aware that the DUML owned by PCC is managed by 1 person, where DUML is not their primary role.

The audit stipulates that PCC is currently being over charged for their streetlighting, in which Genesis are working with PCC to resolve. The Audit also highlights that the information pertaining to the NZTA is inaccurate, resulting in an under billing/settlement. As PCC on charges the load to NZTA, Genesis will ascertain the issues with NZTA data and make the necessary suggestions to PCC to rectify the asset inaccuracies to ensure compliance is met. This may mean asset verification from NZTA. Genesis may need to request a short-term exemption in order to find solutions to gain database accuracies.