ELECTRICITY INDUSTRY PARTICIPATION CODE
DISTRIBUTED UNMETERED LOAD AUDIT REPORT

VERITEK

For

WAIMATE DISTRICT COUNCIL AND GENESIS ENERGY LIMITED

Prepared by: Steve Woods (assisted by Deborah Anderson)

Date audit commenced: 14 May 2018

Date audit report completed: 22 May 2018

Audit report due date: 01-Jun-18

TABLE OF CONTENTS

EXECUTIVE SUMMARY

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

The audit was conducted in accordance with the audit guidelines for DUML audits version 1.1, which became effective on 1 June 2017.

WDC manages the streetlight data in RAMM. The data from the local distributor Alpine Energy (**Alpine**) was being used up until May 2016 when Alpine ceased providing this information on behalf of the councils.

WDC do not provide RAMM reports of the streetlight data to Genesis. Instead Genesis have confirmed "For Waimate DC, we bill and submit based on the information on the registry and use the average burn hours for the whole year"

The data in the registry is dated January 2016 and has not been updated since. Registry data is being used to derive submission. As noted in the last audit, I recommend that the RAMM database is used to derive submission as soon as possible.

Seven non-compliances have been made and one recommendation made for a future risk rating of 24 and a next audit recommendation of six months.

The matters raised are shown in the tables 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	Unmetered load held on the Registry, being used to calculate monthly submissions, is a historic value. The difference between the submission made based on Registry information and the outcome based on WDC's database is calculated to be an under submission 2,782.1 kWh for March period	Weak	Medium	6	Investigating
ICP identifier and items of load	2.2	11(2)(a) and (aa) of Schedule 15.3	Not all items of load have an ICP identifier recorded against them.	Moderate	Low	2	Investigating

Description and capacity of load	2.4	11(2)(c) and (d) of Schedule 15.3	Six of the seven lamp type wattages were not correct, affecting 456 lamps with an overall wattage difference of 1,157 kW per annum.	Weak	Low	3	Investigating
All load recorded in database	2.5	11(2A) of Schedule 15.3	All load is not recorded in the database. One additional 'PHIL (70N, 70 watts)' lamp was located on Pitman Place during the sample check. Will result in estimated under submission of 354.5 kWh per annum	Moderate	Low	2	Investigating
Tracking of load changes	2.6	11(3) of Schedule 15.3	Changes to load are not always notified by NetCon in a timely manner. No adjustment is made to the database for Festive light load.	Moderate	Low	2	Investigating
Database accuracy	3.1	15.2 and 15.37B(b)	The database was found to contain some inaccuracies. The database check found six of the seven lamp type and wattages were not correct, affecting 456 lamps with an overall wattage difference of 1,157 kW per annum. The field audit found one additional lamp and one lamp type and wattage difference. Resulting in estimated under submission of 367 kWh per annum. The field data was 100.6% of the database data for the sample checked. A difference of 86 watts. This will result in estimated under submission of 367 kWh per annum.	Weak	Low	3	Investigating

Volume information accuracy	3.2	15.2 and 15.37B(c)	Unmetered load held on the Registry, being used to calculate monthly submissions, is a historic value. The difference between the submission made based on Registry information and the outcome based on WDC's database is calculated to be an under submission 2,782.1 kWh for March period.	Moderate	Weak	6	Investigating
Future Risk Rating						**24**	

Future risk rating	1-3	4-6	7-8	9-17	18-26	27+
Indicative audit frequency	36 months	24 months	18 months	12 months	6 months	3 months

RECOMMENDATIONS

Subject	Section	Description	Recommendation
Deriving submission information	2.1	Registry information used for submission is historic.	Waimate DC send Genesis a monthly wattage report from RAMM.

ISSUES

Subject	Section	Description	Issue

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.

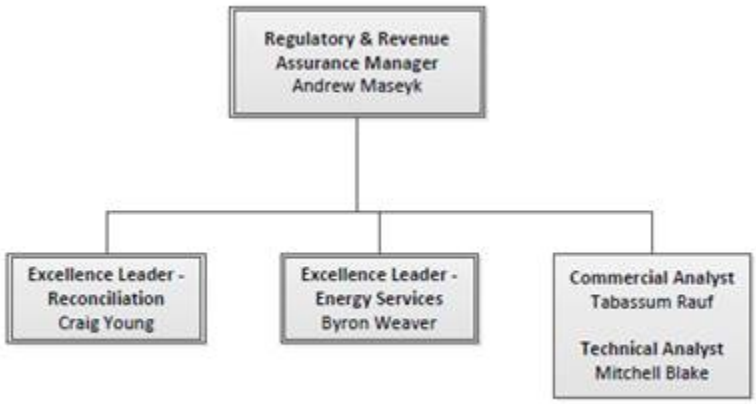
Audit observation

The Electricity Authority's website was reviewed to identify any exemptions relevant to the scope of this audit. There are no exemptions in place relevant to the scope of this audit.

Audit commentary

Compliance is confirmed.

1.2. Structure of Organisation



1.3. Persons involved in this audit

Auditor:

Steve Woods

Veritek Limited

Electricity Authority Approved Auditor

Other personnel assisting in this audit were:

Name	Title	Company
Shweta Arora	Reconciliation Systems Analyst	Genesis Energy

Rob Moffatt	Roading Manager	Waimate District 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".

WDC 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

The following ICPs are relevant to the scope of this audit:

ICP Number	Description	NSP	Profile	Number of items of load	Database wattage (watts)
0000000002AL627	Streetlighting	STU0111	UNM	611	72,506.40
No ICP no.				10	1,425

1.7. Authorisation Received

All information was provided directly by Genesis and WDC.

1.8. Scope of Audit

This audit of the WDC 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.

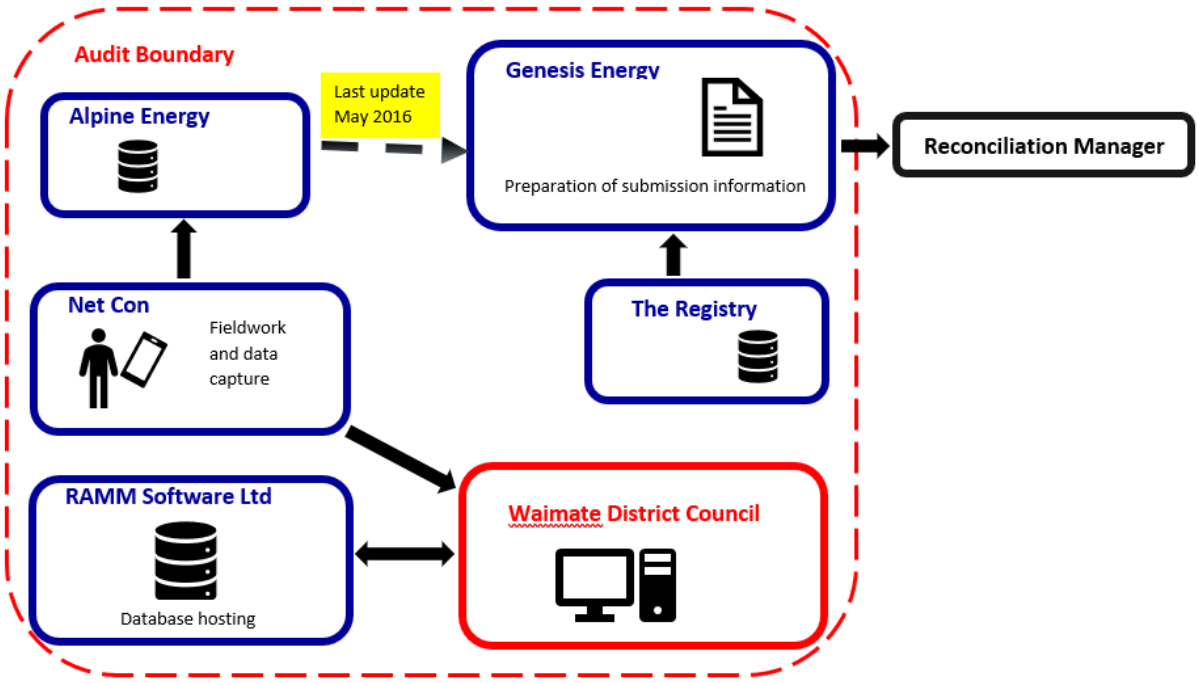
The audit was conducted in accordance with the audit guidelines for DUML audits version 1.1, which became effective on 1 June 2017.

The distributor for the Waimate region is Alpine. Historically Alpine provided usage data to Genesis, but no updates have been received from Alpine since May 2016 when they ceased providing this information on behalf of the councils. WDC manages the streetlight data in RAMM.

Alpine's contracting company, NetCon is the contractor for streetlight maintenance and new connections. All new streetlight connections or removals follow the "new connections" process and a "streetlight movements" form is required to be completed.

When change notifications are received from NetCon, WDC update their RAMM database within the month that the notification is received. However, notifications can take a number of months to be sent to WDC eg new lighting installed at intersection of State Highway 1 and Cooneys Road, due to a misunderstanding in responsibility.

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 155 items of load on 16th May 2018

1.9. Summary of previous audit

The previous audit was completed in May 2017 by Rebecca Elliot of Veritek Ltd. Six non-compliances and three recommendations were made. The status of the non-compliances are described below:

Subject	Section	Clause	Non-compliance	Status
Deriving Submission Information	2.1	11(1) of schedule 15.3	No wattage report has been received since May 2016 so any changes made will not have flowed through to submission.	Unchanged
ICP Identifier	2.2.1	11(2)(a) of schedule 15.3	The ICP is not recorded against each item of load.	Unchanged
Location of items of load	2.2.2	11(2)(b) of schedule 15.3	Location of each item of load not recorded.	Cleared

Subject	Section	Clause	Non-compliance	Status
Capacity of each item of load	2.2.4	11(2)(d) of schedule 15.3	Ballast loss multiplier is too low. Submission information low by approx. 140,000 kWh per annum.	Cleared
Tracking of load changes	2.3	11(3) of schedule 15.3	No changes of load tracked since May 2016.	Unchanged
Audit trail	2.4	11(4) of schedule 15.3	Audit trail does not exist.	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 3 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 UNM profile. The data from the local distributor Alpine was being used up until May 2016 when Alpine ceased providing this information on behalf of the councils. No reports have been received since this time, instead Genesis have confirmed "For Waimate DC, we bill and submit based on the information on the registry and use the average burn hours for the whole year".

The information on the registry has not been updated since 01/01/2016, therefore any changes that have occurred will not have flowed through to submission.

It was recommended last audit that a monthly report is sent from Waimate DC to Genesis, I have repeated this recommendation.

The process being used is compliant but the lack of up to date data being used for submission is recorded as non-compliance.

Recommendation	Description	Audited party comment	Remedial action
Regarding: Clause 11(1) of schedule 15.3	Waimate DC send Genesis a monthly wattage report from RAMM.	Genesis has not yet been able to obtain the detailed information.	Investigating

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.1 With: 11(1) of Schedule 15.3 From: 01-Jan-16 To: 30-Apr-18	Unmetered load held on the Registry, being used to calculate monthly submissions, is a historic value. The difference between the submission made based on Registry information and the outcome based on WDC's database is calculated to be an under submission 2,782.1 kWh for March period. Potential impact: Medium Actual impact: Medium Audit history: None Controls: Weak Breach risk rating: 6
Audit risk rating	**Rationale for audit risk rating**
Medium	The controls are rated as weak because Waimate District Council's database is not being used for submissions and Registry information has not been updated The impact is rated as medium, based on the potential calculated kWh difference.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis has not been able to obtain the relevant detailed information to validate volumes being reported. Genesis are still actively seeking this information.	10/2018	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis will liaise with contracted party to open communication channels and monthly reporting.	10/2018	

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

There are 10 items of load that do not have an ICP number recorded against them in the database.

No	Road ID	Road Name	Pole ID	Pole Number	Easting	Northing	Lamp Make Model	ICP Group
1	432	MCNAMARAS ROAD (432)	22	31764	1450109	5041846	PHIL (150N, 150 watts)	0000000000000SH
2	662	OLD SLIP ROAD (662)	43	1000	1400816	5044741	PHIL (70N, 70 watts)	0000175690WT-219
3	662	OLD SLIP ROAD (662)	44	2000	1400974	5044667	PHIL (70N, 70 watts)	0000175690WT-219
4	662	OLD SLIP ROAD (662)	45	3000	1401119	5044593	PHIL (70N, 70 watts)	0000175690WT-219
5	1016	SH 82 RS 0000 WAIMATE (1016)	462	28	1451761	5048701	PHIL (150N, 150 watts)	0000000000000SH
6	1016	SH 82 RS 0000 WAIMATE (1016)	463	29	1451736	5048675	PHIL (150N, 150 watts)	0000000000000SH
7	1018	SH 1 RS 532 MAKIKIHI (1018)	48438	23			PHIL (150N, 150 watts)	0000000000000SH
8	1018	SH 1 RS 532 MAKIKIHI (1018)	48439	24			PHIL (150N, 150 watts)	0000000000000SH
9	1018	SH 1 RS 532 MAKIKIHI (1018)	48440	25			PHIL (150N, 150 watts)	0000000000000SH
10	1018	SH 1 RS 532 MAKIKIHI (1018)	48441	26			PHIL (150N, 150 watts)	0000000000000SH

16th May comments from Rob Moffat

Item 1: will be corrected

Items 2 – 4: come under Waitaki DC

Items 5 – 10: SH1/SH82 on-charged to NZTA

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.2 With: Clause 11(2)(a) and (aa) of Schedule 15.3 From/to: entire audit period	Not all items of load have an ICP identifier recorded against them. Potential impact: Low Actual impact: Low Audit history: Once Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as moderate, majority of items of load have an ICP number recorded against them. The impact is rated as low due to the estimated relatively small kWh per annum.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis has not been able to obtain the relevant detailed information to validate volumes being reported. Genesis are still actively seeking this information.	10/2018	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis will liaise with contracted party to open communication channels and monthly reporting.	10/2018	

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

Code reference

Clause 11(2)(b) of Schedule 15.3

Code related audit information

The DUML database must contain the location of each DUML item.

Audit observation

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

Audit commentary

There are 80 items of load that have no GPS co-ordinates in the database. Each of them does have street values along with Pole numbers to assist with locating the lamp.

Audit outcome

Compliant

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

Code reference

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

Code related audit information

The DUML database must contain:

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

Audit observation

The database was checked to confirm that it contained a field for lamp type and wattage capacity and included any ballast or gear wattage and that each item of load had a value recorded in these fields.

Audit commentary

Lamp make, model, lamp wattage and ballast wattage are included in the database.

The extract provided from the RAMM database was checked, it contains the rated wattage and the lamp construction in its description. The majority of the lamp information is not correct when compared to the Electricity Authority's published standardised wattage table.

The differences found were six of the seven lamp type and wattage were not correct, affecting 456 lamps with an overall wattage difference of 271 W, which equates to 1,157 kW per annum.

Lamp Type	Description	Wattage	Lamp Type Category	WDC database	Correct wattage	Lamps affected	wattage difference	total difference
LED (17W, 17 watts)	Typical for 150w HPS	35	LED	LED (17W, 17 watts)	17	2	18	36
PHIL (150N, 150 watts)	(blank)	150	High Pressure Sodium	36w Low Pressure Sodium	168	3	-18	-54
PHIL (250N, 250 watts)	(blank)	250	High Pressure Sodium	PHIL (250N, 250 watts)	278	1	-28	-28
PHIL (70N, 70 watts)	Typical for 150w HPS	88	High Pressure Sodium	PHIL (70N, 70 watts)	83	4	5	20
PHIL (70N, 70 watts)	Typical for 70w HPS	82	High Pressure Sodium	PHIL (70N, 70 watts)	83	427	-1	-427
PHIL (80M, 80 watts)	Typical for 80w (MV)	92	MV	PHIL (80M, 80 watts)	90	1	2	2
UNK (160W, 160 watts)	Typical for 150w HPS	178	LED	UNK (160W, 160 watts)	168	18	10	180
						456		-271W

Database displayed by 'Lamp Make Model' and 'Model' fields:

Lamp Make Model Model	EA Wattage	25	35	82	88	92	150	160	168	178	250	278
LED (17W, 17 watts)	17W		2									
Typical for 150w HPS			2									
PHIL (150N, 150 watts)							3		86			
Typical for 150w HPS	168W								86			
(blank)							3					
PHIL (250N, 250 watts)											1	69
Typical for 250w HPS	278W											69
(blank)											1	
PHIL (70N, 70 watts)				427	4							
Typical for 150w HPS					4							
Typical for 70w HPS	83W			427								
PHIL (80M, 80 watts)						1						
Typical for 80w (MV)	90W					1						
UNK (160W, 160 watts)								2		18		
Typical - self ballast 160wML								1				
Typical for 150w HPS	168W									18		
(blank)								1				
UNK (25W, 25 watts) LED?		8										
Typical for 25w	25W	8										
Count of Lamps	**621**	**8**	**2**	**427**	**4**	**1**	**3**	**2**	**86**	**18**	**1**	**69**

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 2.4 With: Clauses 11(2)(c) and (d) of Schedule 15.3 From/to: entire audit period	Six of the seven lamp type wattages were not correct, affecting 456 lamps with an overall wattage difference of 1,157 kW per annum. Potential impact: Low Actual impact: Low Audit history: None Controls: Weak Breach risk rating: 3		
Audit risk rating	**Rationale for audit risk rating**		
Low	The controls are rated as weak because 456 of the 621 items of load in the database have the incorrect wattage information. The impact is rated as low, because of the relatively small kW involved.		
Actions taken to resolve the issue		**Completion date**	**Remedial action status**
Genesis has not been able to obtain the relevant detailed information to validate volumes being reported. Genesis are still actively seeking this information.		10/2018	Investigating
Preventative actions taken to ensure no further issues will occur		**Completion date**	
Genesis will liaise with contracted party to open communication channels and monthly reporting.		10/2018	

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 155 items of load on the 16th May.

Audit commentary

The field audit findings are detailed in the table below:

Street	Database count	Field count	Light count differences	Wattage recorded incorrectly	Comments
Strata					
Glenavy					
PYKE STREET (494)	2	2			
Morven					
MACLEAN STREET (486)	4	4			
Waimate 1					
AUGUSTINE STREET (754)	6	6			
BOND STREET (756)	4	4			
DURHAM STREET (751)	2	2			
PARSONAGE ROAD (743)	15	15			
Waimate 2					
HIGH STREET (740)	32	32			
RHODES STREET (725)	16	16			
MANSE STREET (729)	9	9			
MILL ROAD (710)	14	14			
WILLIAM STREET (770)	14	14		-9	In DB as PHIL 80M but should be PHIL 70N
POINT BUSH ROAD (705)	6	6			
JOHN STREET (774)	10	10			
GOLDSMITH STREET (771)	3	3			
WILKIN STREET (773)	10	10			
STUDHOLME STREET (777)	6	6			
PITMAN PLACE (793)	2	3	1	83	
Total Lamps	**155**	**155**	**1**	**74 W**	

I found one additional lamp in the field than was recorded in the database, at Pitman Place. An additional 83 w. This will result in estimated under submission of 354.5 kWh per annum (based on annual burn hours of 4,271 as detailed in the DUML database auditing tool). This additional load is recorded in this section as a non-compliance in this section.

There was also one lamp recorded as 'PHIL (80M, 80 watts) – Typical for 80w (MV)', 92 watts that I believe should be classified in the database as 'PHIL (70N, 70 watts) – Typical for 70w HPS', 83 watts. The difference between the two lamp types is 9 watts. This will result in estimated over submission of 38.4 kWh per annum (based on annual burn hours of 4,271 as detailed in the DUML database auditing tool).

The field data was 100.6% of the database data for the sample checked, and database accuracy is assessed to be 100.6%. The total wattage recorded in the database for the sample was 14,649 watts. The total wattage found in the field for the sample checked was 14,733 watts, a difference of 86 watts. This will result in estimated under submission of 367 kWh per annum (based on annual burn hours of 4,271 as detailed in the DUML database auditing tool).

The database lamp difference and field audit sample accuracy are recorded as non-compliance in **section 3.1**.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.5 With: Clause 11(2A) of Schedule 15.3 From/to: entire audit period	All load is not recorded in the database. One additional 'PHIL (70N, 70 watts)' lamp was located on Pitman Place during the sample check. Will result in estimated under submission of 354.5 kWh per annum Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as moderate because only one additional item of load was located. The impact is rated as low, because of the relatively small kW involved.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis has not been able to obtain the relevant detailed information to validate volumes being reported. Genesis are still actively seeking this information.	10/2018	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis will liaise with contracted party to open communication channels and monthly reporting.	10/2018	

2.6. Tracking of load changes (Clause 11(3) of Schedule 15.3)

Code reference

Clause 11(3) of Schedule 15.3

Code related audit information

The DUML database must track additions and removals in a manner that allows the total load (in kW) to be retrospectively derived for any given day.

Audit observation

The process for tracking of changes in the database was examined.

Audit commentary

The processes were reviewed for ensuring that changes in the field are captured. Alpine Energy's contracting company, NetCon is the contractor for streetlight maintenance and new connections.

All new streetlight connections or removals follow the "new connections" process and a "streetlight movements" form is required to be completed. Waimate DC add new lights to the RAMM database, within the month they are received, once the street has been vested to the council. There was mention of NetCon's advice not always being received in a timely manner, example given was due to a responsibility misunderstanding.

Monthly outage patrols are carried out by NetCon, and maintenance is completed as a result of this. Any changes made are communicated to WDC and captured in RAMM. As Alpine are no longer maintaining a street light database it has been recommended again in Section 2.1 above, that Genesis use the Waimate DC RAMM database to calculate submission.

Festive lights are managed by the Information Centre. A contractor is used to install and then remove the lights. WDC are advised of the period the lights are active but no changes are made to the database. Genesis is not advised of the additional load.

WDC have approved a LED replacement project, this is expected to begin in around 6 months time and take 3 – 4 months to complete. This will have a significant impact on the database. The intention is to ensure the correct lamp type, wattage and ballast values are created in the database at the start of this project.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.6 With: 11(3) of Schedule 15.3 From/to: entire audit period	Changes to load are not always notified by NetCon in a timely manner. No adjustment is made to the database for Festive light load. Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as moderate because when advised RAMM is updated in a timely manner. The impact is rated as low, because of the relatively small kW involved.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis has not been able to obtain the relevant detailed information to validate volumes being reported. Genesis are still actively seeking this information.	10/2018	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis will liaise with contracted party to open communication channels and monthly reporting.	10/2018	

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

Code reference

Clause 11(4) of Schedule 15.3

Code related audit information

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

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

Audit observation

The database was checked for audit trails.

Audit commentary

RAMM records audit trail information of changes made.

Audit outcome

Compliant

3. ACCURACY OF DUML DATABASE

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

Code reference

Clause 15.2 and 15.37B(b)

Code related audit information

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

Audit observation

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

Plan Item	Comments
Area of interest	Waimate region
Strata	The database contains 621 items of load in Waimate area. The processes for the management of 621 items of load are the same, but I decided to place the items of load into two strata, as follows: 1. Glenavy, Morven & Waimate 1 2. Waimate 2
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 17 subunits.
Total items of load	155 items of load were checked. • Strata 1 33 • Strata 2 122

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

Audit commentary

Database checks of Lamp type and wattage found six of the seven lamp type and wattages were not correct, affecting 456 lamps with an overall wattage difference of 271 W, which equates to 1,157 kW per annum, recorded as a non-compliance in **section 2.4**.

The field audit found one lamp type and wattage difference, and a one additional lamp. The additional lamp is recorded as a non-compliance in **section 2.5**. The lamp difference as detailed in section 2.5, a lamp in the database as PHIL 80M but should be PHIL 70N, results in a 9 W difference is recorded as a non-compliance below. This will result in estimated over submission of 38.4 kWh per annum (based on annual burn hours of 4,271 as detailed in the DUML database auditing tool).

The field data was 100.6% of the database data for the sample checked. The total wattage recorded in the database for the sample was 14,647 watts. The total wattage found in the field for the sample checked was 14,733 watts, a difference of 86 watts. This will result in estimated under submission of

367 kWh per annum (based on annual burn hours of 4,271 as detailed in the DUML database auditing tool).

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.1 With: 15.2 and 15.37B(b) From/to: entire audit period	The database was found to contain some inaccuracies. • The database check found six of the seven lamp type and wattages were not correct, affecting 456 lamps with an overall wattage difference of 1,157 kW per annum. • The field audit found one additional lamp and one lamp type and wattage difference. Resulting in estimated under submission of 367 kWh per annum. • The field data was 100.6% of the database data for the sample checked. The total wattage recorded in the database for the sample was 14,647 watts. The total wattage found in the field for the sample checked was 14,733 watts, a difference of 86 watts. This will result in estimated under submission of 367 kWh per annum. Potential impact: Low Actual impact: Low Audit history: Once previously Controls: Weak Breach risk rating: 3
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as weak because of the amount of incorrect information in the database. The impact is rated as low, because of the relatively small kW involved.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis has not been able to obtain the relevant detailed information to validate volumes being reported. Genesis are still actively seeking this information.	10/2018	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis will liaise with contracted party to open communication channels and monthly reporting.	10/2018	

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.*

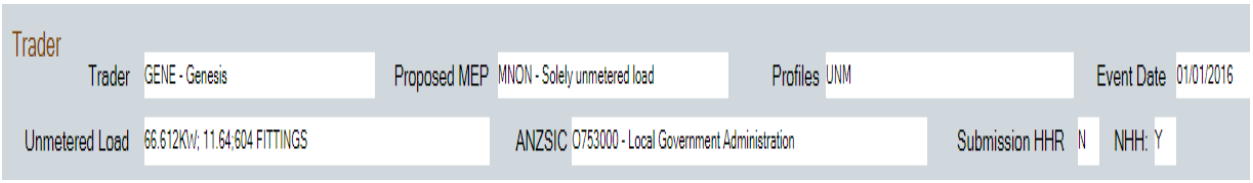
Audit observation

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

The daily unmetered kW value on the registry and used for submission is historic and has not changed since it was originally entered on 01/01/2016. The Registry values state 604 items of load and 66.612kW. Genesis have confirmed "For Waimate DC, we bill and submit based on the information on the registry and use the average burn hours for the whole year"



No reports from the WDC database are provided to Genesis, this has been recommended again in **section 2.1**.

Upon reviewing WDC's database, there are currently 621 items of load and a wattage total of 73,931 W. I estimate the annual consumption would be approximately 315,759 kWh, and the daily consumption 865.1 kWh (based on annual burn hours of 4,271 as detailed in the DUML database auditing tool).

The difference between what was submitted, based on Registry information and what I have calculated based on the database results in an under submission of 2,782.1 kWh for the month of March 2018.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.2 With: 15.2 and 15.37B(c) From/to: entire audit period	Unmetered load held on the Registry, being used to calculate monthly submissions, is a historic value. The difference between the submission made based on Registry information and the outcome based on WDC's database is calculated to be an under submission 2,782.1 kWh for March period. Potential impact: Medium Actual impact: Medium Audit history: None Controls: Weak Breach risk rating: 6
Audit risk rating	**Rationale for audit risk rating**
Medium	The controls are rated as weak because Waimate District Council's database is not being used for submissions and Registry information has not been updated The impact is rated as medium, based on the potential calculated kWh difference.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis has not been able to obtain the relevant detailed information to validate volumes being reported. Genesis are still actively seeking this information.	10/2018	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis will liaise with contracted party to open communication channels and monthly reporting.	10/2018	

CONCLUSION

WDC manages the streetlight data in RAMM. The data from the local distributor Alpine Energy (**Alpine**) was being used up until May 2016 when Alpine ceased providing this information on behalf of the councils.

WDC do not provide RAMM reports of the streetlight data to Genesis. Instead Genesis have confirmed "For Waimate DC, we bill and submit based on the information on the registry and use the average burn hours for the whole year"

The data in the registry is dated January 2016 and has not been updated since. Registry data is being used to derive submission. As noted in the last audit, I recommend that the RAMM database is used to derive submission as soon as possible.

Seven non-compliances and one recommendation have been made for a future risk rating of 24.

Future risk rating	1-3	4-6	7-8	9-17	18-26	27+
Indicative audit frequency	36 months	24 months	18 months	12 months	6 months	3 months

PARTICIPANT RESPONSE

Genesis are actively seeking to obtain the relevant information for this account.

APPENDIX A - TEMPLATE FOR NON-COMPLIANCE, ISSUES AND RECOMMENDATIONS.

NON-COMPLIANCE

Non-compliance	Description
Audit Ref: With: From: Click here to enter a date. To: Click here to enter a date.	Potential impact: Choose an item. Actual impact: Choose an item. Audit history: Controls: Choose an item. Breach risk rating:
Audit risk rating	**Rationale for audit risk rating**
Choose an item.	

Actions taken to resolve the issue	Completion date	Remedial action status
[Participant comment]	[proposed or actual completion date]	Choose an item.
Preventative actions taken to ensure no further issues will occur	**Completion date**	
[Participant comment]	[proposed or actual completion date]	

RECOMMENDATION

Description	Recommendation	Audited party comment	Remedial action

ISSUE

Description	Issue	Remedial action