ELECTRICITY INDUSTRY PARTICIPATION CODE
DISTRIBUTED UNMETERED LOAD AUDIT REPORT

For

OPOTIKI DISTRICT COUNCIL
AND GENESIS ENERGY

Prepared by: Rebecca Elliot

Date audit commenced: 10 June 2019

Date audit report completed: 17 July 2019

Audit report due date: 1 June 2018

TABLE OF CONTENTS

EXECUTIVE SUMMARY

This audit of the Opotiki District Council (**ODC**) 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 audit of ODC was delayed as Genesis had difficulty in getting a response from ODC to progress the audit and get a database extract despite multiple requests. The correct personnel at ODC have been identified and are working with Genesis to ensure that the ODC DUML load is reconciled as accurately as possible.

ODC commenced an LED roll out in March 2018. Genesis have been using the registry figures and UML profile to calculate submissions. ODC provided Genesis with a RAMM database extract in May 2019 and plan to provide a monthly report from the database going forward. Genesis will be using this data to revise submissions over the past 14 months. I have assessed the variance between the database figures and those recorded on the registry and estimate that the annual over submission is 149,160 kWh per annum.

On 18 June 2019, the Electricity Authority issued a memo clarifying the memo of 2012 that stated that a monthly snapshot was sufficient to calculate submission from, and confirmed the code requirement to calculate the correct monthly load must:

- take into account when each item of load was physically installed or removed; and
- wash up volumes must take into account where historical corrections have been made to the DUML load and volumes.

Genesis will be working with ODC to determine how this is best achieved.

ODC are utilising the same central management system as Whakatane DC. This is called Telensa. It controls the light burn times and has replaced the networks relays previously used, therefore the fixed burn hours used to calculate submission will not be representative of the actual burn hours. I have recorded non-compliance for the use of the Telensa system without an appropriate profile and recommend that Genesis work with ODC and the Electricity Authority to get a profile to address this.

ODC expects the LED rollout of the existing lights to be completed by the end of June 2019. There is a further project to put infill lighting in. This is at design stage only. The field audit accuracy confirmed this expectation with an estimated accuracy of 103.7%. This falls within the +/- 5% allowable threshold and therefore the database was confirmed to be accurate.

This audit found six non-compliances and makes two recommendations. The future risk rating of 25 indicates that the next audit be completed in three months. I have considered this in conjunction with the Genesis' responses and recommend that the next audit be in seven months to allow time for the actions to be completed before the next audit occurs.

The matters raised are detailed below:

AUDIT SUMMARY

NON-COMPLIANCES

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Distributed unmetered load audits	1.10	17.295F of part 17	Audit not completed within 12 months of Part 16A coming into effect.	Strong	Low	1	Cleared
Deriving submission information	2.1	11(1) of Schedule 15.3	Variance found between RAMM database extract and the kWh figure submitted by Genesis resulting in an estimated annual over submission 149,160 kWh. Telensa system used to control lighting without an approved profile. The monthly database extract provided does not track changes at a daily basis and is provided as a snapshot. 76 items of load with no wattage recorded resulting in a small amount of under submission. Light changes being recorded without the actual date of installation being known.	Weak	High	9	Identified
Description and capacity of load	2.4	11(2)(c) and (d) of Schedule 15.3	65 items of load with no lamp description, wattage and ballast recorded. 11 items of load with no lamp wattage or ballast recorded.	Moderate	Low	2	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
All load recorded in database	2.5	11(2A) and (d) of Schedule 15.3	One additional light found in the field.	Moderate	Low	2	Identified
Database accuracy	3.1	15.2 and 15.37B(b)	65 items of load with no lamp description, wattage and ballast recorded. 11 items of load with no lamp wattage or ballast recorded.	Moderate	Low	2	Investigating
Volume information accuracy	3.2	15.2 and 15.37B(c)	Variance found between RAMM database extract and the kWh figure submitted by Genesis resulting in an estimated annual over submission 149,160 kWh. Telensa system used to control lighting without an approved profile. The monthly database extract provided does not track changes at a daily basis and is provided as a snapshot. 76 items of load with no wattage recorded resulting in a small amount of under submission. Light changes being recorded without the actual date of installation being known.	Weak	High	9	Identified
Future Risk Rating						25	

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	Recommendation
Deriving submission information	2.1	Liaise with ODC and the Electricity Authority to get a profile in place to enable the Telensa data to be used to calculate submission.
Database accuracy	3.1	Liaise with ODC and Horizon to ensure new streetlights are reconciled from the point of electrical connection.

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

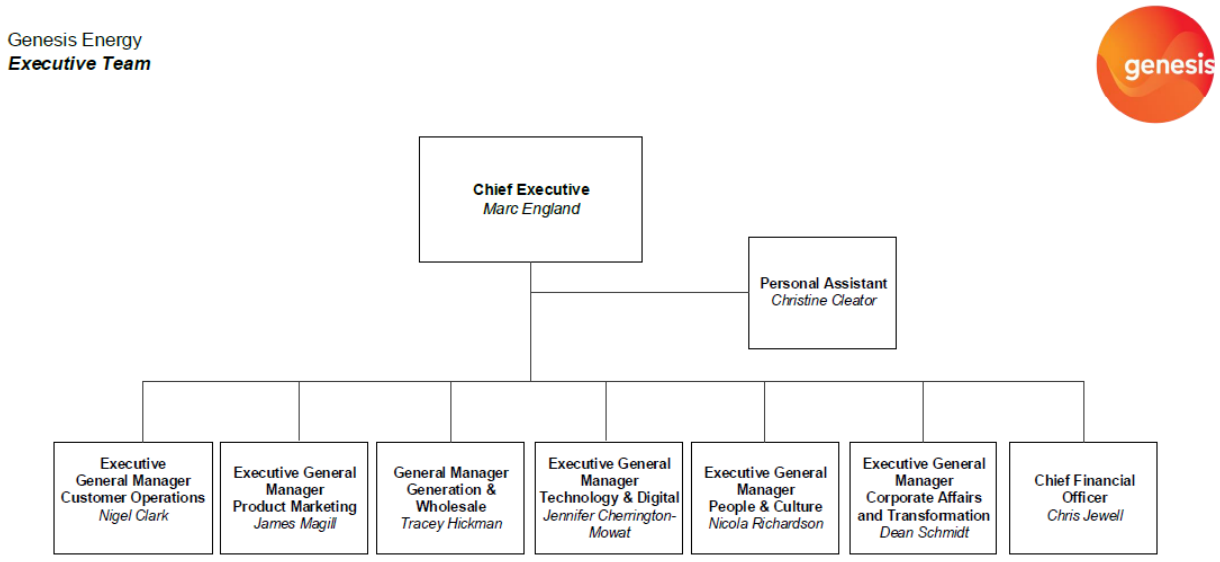
The Electricity Authority's website was reviewed to identify any exemptions relevant to the scope of this audit.

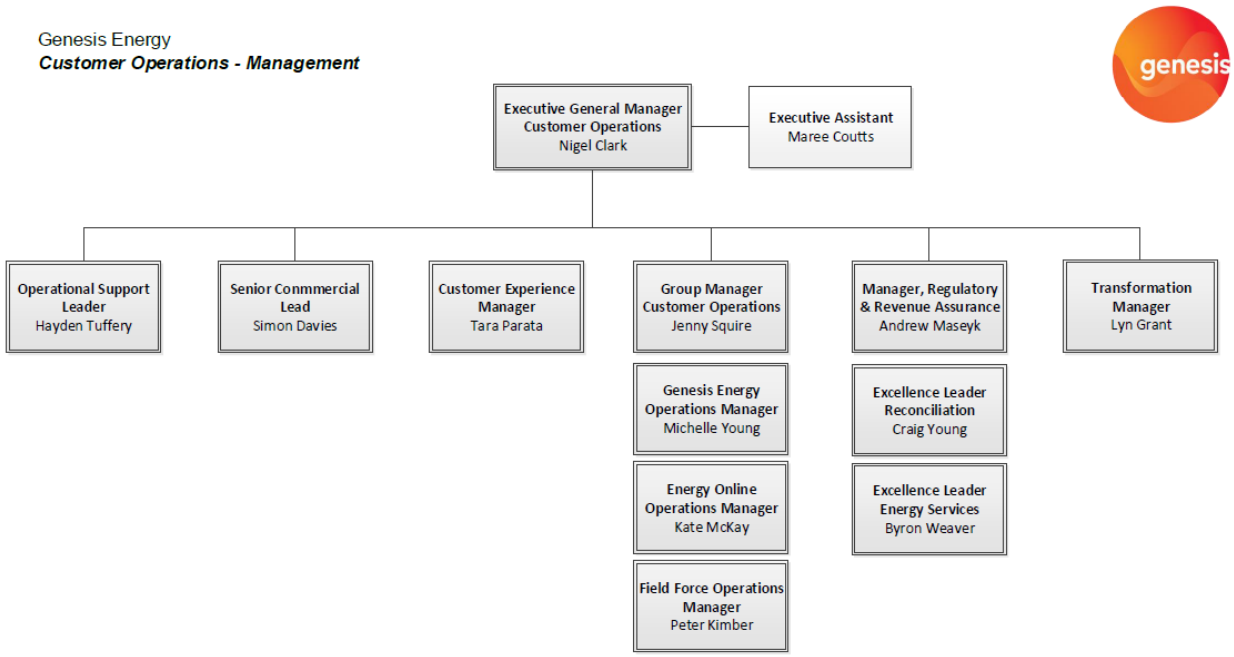
Audit commentary

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

1.2. Structure of Organisation

Genesis provided the relevant organisational structure:





1.3. Persons involved in this audit

Auditor:

Rebecca Elliot

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 - Reconciliations Team	Genesis Energy
Anthony Kirikiri	Technical Engineer Assets	Opotiki DC
Billy Kingi	Chief Financial Officer	Opotiki DC
Janan Nirainjanan	Project Manager	Opotiki DC

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". The specific module used for DUML is called RAMM Contractor.

The database is backed-up in accordance with standard industry procedures. Access to the database is secure by way of password protection.

1.5. Breaches or Breach Allegations

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

1.6. ICP Data

ICP Number	Description	NSP	Profile	Number of items of load	Database wattage (watts)
1000023038BPAFE	OPOTIKI DISTRICT COUNCIL (Te Kaha)	WAI0501	UNM	10	168
1000023040BPDB7	OPOTIKI DISTRICT COUNCIL Rural	WAI0111	UNM	145	2,686
1000023041BP1F2	OPOTIKI DISTRICT COUNCIL Urban	WAI0111	UNM	239	5,448
Total				394	8,302

1.7. Authorisation Received

All information was provided directly by Genesis and ODC.

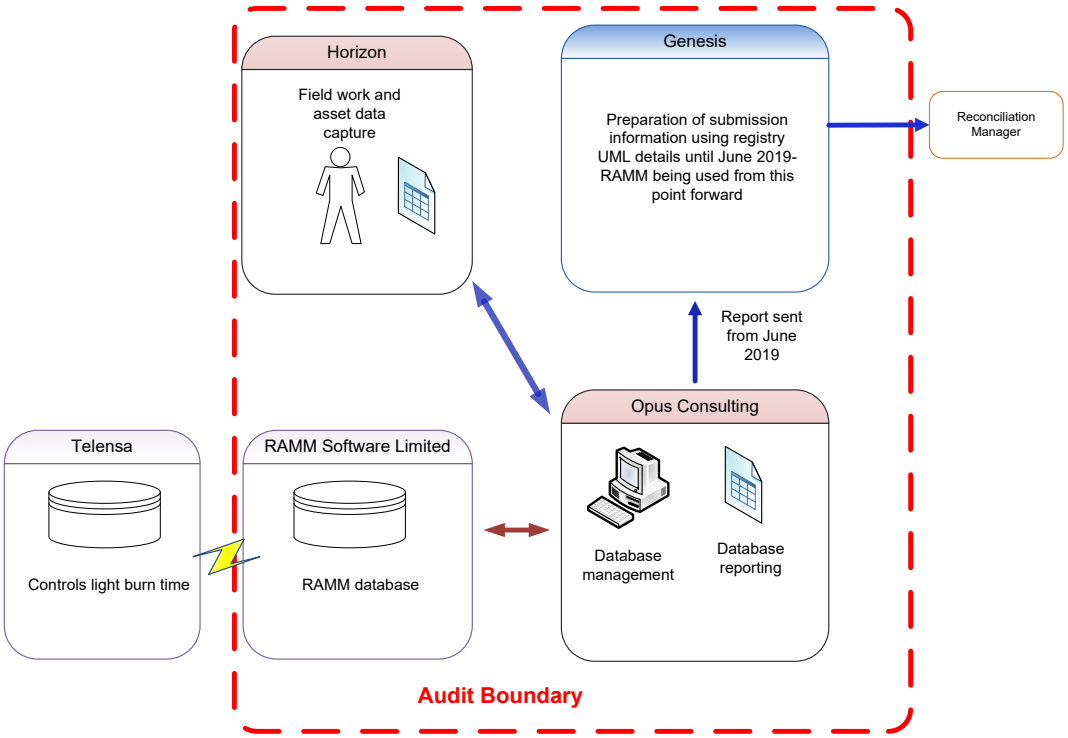
1.8. Scope of Audit

This audit of the Opotiki District Council (**ODC**) 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.

A field audit against the RAMM database extract was undertaken to assess the accuracy of this against the registry figures used for submission. Horizon is engaged by ODC to conduct the fieldwork and Opus is engaged to manage the database. ODC are utilising the same central management system as Whakatane DC. This is called Telensa. It controls the light burn times and has replaced the networks relays previously used therefore the fixed burn hours used to calculate submission will not be representative of the actual burn hours. Outputs from this system have yet to be approved by the Electricity Authority to be used to derive submission, therefore this system is outside of the scope of this audit.

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 119 items of load on 25th June 2019.

1.9. Summary of previous audit

This is the first audit completed of the ODC DUML load.

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. Genesis were unable to complete this audit by the required timeframe as a database extract was not able to be obtained prior to the audit due date.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 1.10 Clause 17.295F of part 17 From: 01-Jun-18 To: 01-Jun-19	Audit not completed within 12 months of Part 16A coming into effect. Potential impact: Low Actual impact: Low Audit history: None Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as strong, as Genesis are reliant on the database provider to supply the data and in this case the delay caused this report to be late. The impact is assessed to be low, as the volume of lights associated with this database are small.

Actions taken to resolve the issue	Completion date	Remedial action status
It has taken some time and considerable effort to engage the Council in providing the required data and being open to scrutiny.	10/06/2019	Cleared
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis has engaged with the Council and will be providing data base information monthly	10/06/2019	

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.

Audit commentary

Genesis reconciles this DUML load using the UML profile. Genesis has been using the registry figures to calculate the unmetered load as no database extracts were being provided. ODC have provided a database extract in May 2019 and is expected to provide these each month going forward. I have assessed compliance against the registry figures updated in early May 2019.

I compared the submission volumes with the load recorded in the database extract provided for this audit in May 2019 against the volumes submitted by Genesis and found:

ICPs	kWh value submitted	Calculated kWh value from database	Differences
1000023042BPD32	2,213	62	2,151
1000023060BP0E2	2,951	991	1,960
1000023047BP07D	10,329	2,010	8,319
Total month kWh difference			-12,430

Annualised this will result in an estimated annual over submission of 149,160 kWh. Genesis intend to use a further database extract provided in June to carry out revisions for the last 14 months. The estimated over submission is recorded as non-compliance below.

ODC have installed a central management system called Telensa. It controls the light burn times and has replaced the networks relays previously used therefore the fixed burn hours used to calculate submission will not be representative of the actual burn hours. This is recorded as non-compliance.

The Telensa system calculates the kWh consumption across the streetlight network and I recommend that Genesis work with ODC and the Electricity Authority to apply for a profile to address this.

Description	Recommendation	Audited party comment	Remedial action
Deriving submission information	Liaise with ODC and the Electricity Authority to get a profile in place to enable the Telensa data to be used to calculate submission.	Genesis has approached the EA in relation to this recommendation. Genesis are currently waiting on a reply as to what they are required to do prior to engaging in an application process. Genesis were under the impression that the profile was not to "Calculate" but to allocate the calculated load, therefore confirmation of the profile requirement has been sort.	Investigating

On 18 June 2019, the Electricity Authority issued a memo confirming that the code requirement to calculate the correct monthly load must:

- take into account when each item of load was physically installed or removed; and
- wash up volumes must take into account where historical corrections have been made to the DUML load and volumes.

Genesis will be working with ODC to determine whether the RAMM report is to be changed or to get the Telensa system to be approved to meet the above requirements. The current monthly report is provided as a snapshot and is non-compliant.

The database accuracy is discussed in **section 3.1.** The field audit confirmed it to be within the acceptable +/-5% accuracy threshold. The 76 items of load with no wattage value and the change of lights being recorded in the database without the actual date of installation being known is recorded as non-compliance below.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.1 With: Clause 11(1) of Schedule 15.3 From: 01-Jun-18 To: 31-May-19	Variance found between RAMM database extract and the kWh figure submitted by Genesis resulting in an estimated annual over submission 149,160 kWh. Telensa system used to control lighting without an approved profile. The monthly database extract provided does not track changes at a daily basis and is provided as a snapshot. 76 items of load with no wattage recorded resulting in a small amount of under submission. Light changes being recorded without the actual date of installation being known. Potential impact: High Actual impact: Unknown Audit history: None Controls: Weak Breach risk rating: 9
Audit risk rating	**Rationale for audit risk rating**
High	The controls are rated as weak as the submission is not calculated for an up to date data source and the burn hours used to calculate submission are fixed but are variable in the field. The impact is assessed to be high due to the number of factors identified above resulting in the true impact on submission being unknown but is likely to be high due to the volume of over submission indicated.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis has previously not been provided with any data pertaining to the ODC assets. The registry information was used to bill/settle the customers load. The dataset that has been received has been analysed and returned to the council; to review. Genesis has found the same issues in the data set as outlined by the auditor and will work with the Council to correct the information as required. Genesis will make the necessary correction to the data as they wish to use this moving forward with the intent the data source will be corrected for future reporting.	01/12/2019	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis along with its auditor made efforts to contact the council in order to get access to their data and the system for auditing purposes.	01/06/2019	

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

Each item of load has an ICP recorded against it.

Audit outcome

Compliant

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

Code reference

Clause 11(2)(b) of Schedule 15.3

Code related audit information

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

Audit observation

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

Audit commentary

All items of load are locatable.

Audit outcome

Compliant

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

Code reference

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

Code related audit information

The DUML database must contain:

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

Audit observation

The database was checked to confirm that it contained a field for lamp type and wattage capacity and included any ballast or gear wattage and that all items of load were recorded.

Audit commentary

Lamp make, model and lamp wattage are included in the database. Examination of the database found 65 items of load that had no lamp description, wattage or ballast recorded. A further 11 items of load had a lamp description, but no wattage recorded. This is recorded as non-compliance.

These have been passed to ODC to correct. This is recorded as non-compliance.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.4 With: Clause 11(2)(c) and (d) of Schedule 15.3 From: 01-Jun-18 To: 31-May-19	65 items of load with no lamp description, wattage and ballast recorded. 11 items of load with no lamp wattage or ballast recorded. 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 as this information is expected to be captured as part of Opus' management of the RAMM database. The impact is assessed to be low as the volume of lights with no wattage is small.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis has previously not been provided with any data pertaining to the ODC assets. The registry information was used to bill/settle the customers load. The dataset that has been received has been analysed and returned to the council; to review. Genesis has found the same issues in the data set as outlined by the auditor and will work with the Council to correct the information as required. Genesis will make the necessary correction to the data as they wish to use this moving forward with the intent the data source will be corrected for future reporting.	01/12/2019	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Monthly reporting will enable Genesis to exception report back to the Council/Opus, enabling the correction of any exceptions. This is a work in progress, the future date is a date that Genesis believe is achievable to have the dataset compliant.	01/12/2019	

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 119 items of load on 25th June 2019.

Audit commentary

The field audit findings for the sample of lamps was accurate with the exception of the streets detailed in the table below:

I found 13 more lamps in the field than were recorded in the database, and nine lamp wattage differences. This is an improvement from the findings in the last audit. The majority of these differences are as a result of the LED roll out which is still in progress. The roll out is expected to be completed by June 2019.

Street	Database count	Field count	Light count differences	Wattage recorded incorrectly	Comments
Abbot Lane	1	0	-1		No lamp found in the field. The record in the database has no wattage recorded
OMAIO PA RD	2	2		2	2x 29W LED light found in the field. No wattage recorded in the database.
WOODLANDS RD	18	19	1	1	1x extra 19W LED found in the field. 19W LED found in the field. No wattage recorded in the database.
Grand Total	**119**	**119**	**2**	**3**	

I found one additional lamp in the field than was recorded in the database. The additional item found in the field is recorded as non-compliance below.

The accuracy of the database is detailed in **section 3.1**.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.5 With: Clause 11(2A) of Schedule 15.3 From: 01-Jun-18 To: 31-May-19	One additional light found in the field. 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 as Opus manage the database changes on ODC's behalf and their controls mitigate risk most of the time. The impact is rated as high as the actual impact is unknown as the registry figure is being used for reconciliation.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis plans to utilise the information provided by the council for future settlements/billing and analyze the data to rectify historical revisions.	01/07/2019	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis will be using the RAMM data for future reporting enabling the controls to be accurately measured.	01/07/2019	

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

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

Audit outcome

Compliant

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

Code reference

Clause 11(4) of Schedule 15.3

Code related audit information

The 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 contains a complete audit trail of all additions and changes with operator ID to the database information.

Audit outcome

Compliant

3. ACCURACY OF DUML DATABASE

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

Code reference

Clause 15.2 and 15.37B(b)

Code related audit information

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

Audit observation

A RAMM database extract provided in May 2019 has been used to populate the registry unmetered load figures. Genesis use the registry figures to calculate submission. A RAMM database extract was provided and I assessed the accuracy of this by using the DUML Statistical Sampling Guideline. The table below shows the survey plan.

Plan Item	Comments
Area of interest	Opotiki District Council area
Strata	The database contains the ODC items of load for three of the three ICPs in the Opotiki region area. The processes for the management of all ODC items of load are the same, but I decided to place the items of load into three strata: 1. Opotiki roads A-Ke 2. Opotiki roads Ki-Z 3. Rural
Area units	I created a pivot table of the roads and I used a random number generator in a spreadsheet to select a total of 31 sub-units making up 30% of the total database wattage.
Total items of load	119 items of load were checked.

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

The process to manage changes made in the field being updated in the database was examined.

Audit commentary

Field Audit Findings

A statistical sample of 119 items of load found that the field data was 103.7% of the database data for the sample checked. This is within the required database accuracy of 5%+/- threshold. The statistical sampling tool reported with 95% confidence the precision of the sample was 19.3% and the true load in the field will be between 100.7% to 120.0% 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 accurate and therefore compliance is confirmed.

The tool indicated that there is potentially 1,300 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 there is a potential estimated submission variance range of between 200 kWh and 7,100 kWh of over submission.

Wattage and ballast accuracy findings

The check of the database confirmed that where a wattage value is populated it is correct. As noted in **section 2.4**, there are 76 items of load that have no wattage value recorded. There are insufficient details to determine what value should be recorded for these items of load, therefore I cannot calculate the estimated under submission. These have been passed to ODC to correct. This is recorded as non-compliance.

Change management process findings

Previously we have recorded that any changes that are made during any given month take effect from the beginning of that month. The code requires that the total load can be retrospectively derived for any given day. The compliance of the database reporting provided to Genesis is detailed in **section 3.2**.

Horizon carries out the field work and provides a spreadsheet of changes to Opus to update RAMM. These are reviewed by Opus before they are accepted into the database and then updated in RAMM as soon as possible. Examples of field sheets were provided. I checked a sample of ten items of load and confirmed that they were installed in RAMM for the correct date. Not all sheets returned from the field have an installation date recorded. These are loaded to the database based on the date they are received. The lack of an installation date on the paperwork is recorded as non- compliance. ODC are working with Opus to ensure that paperwork returned from the field is completed fully.

ODC have completed the roll out of LED lights for the existing lights and are in the planning stage to install infill lighting. This is expected to be installed during the next financial year.

ODC are utilising the same central management system as Whakatane DC. This is called Telensa. It controls the light burn times and has replaced the networks relays previously used therefore the fixed burn hours used to calculate submission will not be representative of the actual burn hours. ODC have no immediate plans to use dimming but I note that the system is capable. The impact of the CMS system on the calculation of submission is discussed further in **sections 2.1** and **3.2**.

The Telensa CMS system tracks faults on the network and therefore outage patrols are no longer required. The system also flags if the lamp burn wattage is different to that recorded in the database. This will increase the accuracy of the data in the database. The data from the Telensa system is synchronised with the RAMM database.

The new connection process was discussed. There has been very little new development in the ODC area. There is a new subdivision being planned but this may still be some years away. New streetlight circuits get connected by the network, and they also carry out the field work, therefore the correct electrical connection date should be known. I recommend this process is reviewed in conjunction with ODC and Horizon to ensure that this is the case in practice.

Description	Recommendation	Audited party comment	Remedial action
Database Accuracy	Liaise with ODC and Horizon to ensure new streetlights are reconciled from the point of electrical connection.	Genesis has yet to discuss this with the council, as the priority was to establish the relationship and data reporting channels. This conversation will be had over the coming months.	Investigating

Festive lighting is connected into the metered circuits and is therefore accounted for in the metered supply.

No private lights have been identified.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.1 With: Clause 15.2 and 15.37B(b) From: 01-Jun-18 To: 31-May-19	65 items of load with no lamp description, wattage and ballast recorded. 11 items of load with no lamp wattage or ballast recorded. Date of install is not recorded for all changes made in the field. 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 as the information returned from the field is not always complete and is being entered into RAMM without the correct date of install being known. The impact is assessed to be low as the volume of lights with no wattage is small.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis will need to discuss this process with the council as the data set itself will not identify this as a discrepancy to the trader as it will be relying on field work completeness to populate correct dates.	01/12/2019	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Request the correct dates to be entered in the field paper work enabling data base information accuracy.	01/12/2019	

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 all ICPs have the correct profile and submission flag; and
- checking the database extract combined with the burn hours against the submitted figure to confirm accuracy.

Audit commentary

Genesis reconciles this DUML load using the UML profile. Genesis has been using the registry figures to calculate the unmetered load as no database extracts were being provided. ODC have provided a database extract in May 2019 and is expected to provide these each month going forward. I have assessed compliance against the registry figures updated in early May 2019. As detailed in **section 2.1**, there is an estimated annual over submission of 149,160 kWh. Genesis intend to use the database extract provided in June to carry out revisions for the last 14 months. The over submission is recorded as non-compliance below.

ODC have installed a central management system called Telensa. It controls the light burn times and has replaced the networks relays previously used, therefore the fixed burn hours used to calculate submission will not be representative of the actual burn hours. The use of the Telensa system without an appropriate profile is recorded as non-compliance. I recommend in **section 2.1**, that Genesis work with ODC and the Electricity Authority to get a profile to address this.

On 18 June 2019, the Electricity Authority issued a memo confirming that the code requirement to calculate the correct monthly load must:

- take into account when each item of load was physically installed or removed; and
- wash up volumes must take into account where historical corrections have been made to the DUML load and volumes.

Genesis will be working with ODC to determine whether the RAMM report is to be changed or to get the Telensa system to be approved to meet the above requirements. The current monthly report is provided as a snapshot and is non-compliant.

The database accuracy is discussed in **section 3.1.** The field audit confirmed it to be within the acceptable +/-5% accuracy threshold. The 76 items of load with no wattage value and the change of lights being recorded in the database without the actual date of installation being known is recorded as non-compliance below.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.2 With: Clause 15.2 and 15.37B(c) From: 01-Jun-18 To: 31-May-19	Variance found between RAMM database extract and the kWh figure submitted by Genesis resulting in an estimated annual over submission 149,160 kWh. Telensa system used to control lighting without an approved profile. The monthly database extract provided does not track changes at a daily basis and is provided as a snapshot. 76 items of load with no wattage recorded resulting in a small amount of under submission. Light changes being recorded without the actual date of installation being known. Potential impact: High Actual impact: Unknown Audit history: None Controls: Weak Breach risk rating: 9
Audit risk rating	**Rationale for audit risk rating**
High	The controls are rated as weak as the submission is not calculated for an up to date data source and the burn hours used to calculate submission are fixed but are variable in the field. The impact is assessed to be high due to the number of factors identified above resulting in the true impact on submission being unknown but is likely to be high due to the volume of over submission indicated.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis has previously not been provided with any data pertaining to the ODC assets. The registry information was used to bill/settle the customers load. The dataset that has been received has been analysed and returned to the council; to review. Genesis will make the necessary correction to the data as they wish to use this moving forward with the intent the data source will be corrected for future reporting.	01/12/2019	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis along with its auditor made efforts to contact the council to get access to their data and the system for auditing purposes. Genesis has contacted the EA in regard to the use of Telensa system burn times.	01/06/2019	

CONCLUSION

The audit of ODC was delayed as Genesis had difficulty in getting a response from ODC to progress the audit and get a database extract despite multiple requests. The correct personnel at ODC have been identified and are working with Genesis to ensure that the ODC DUML load is reconciled as accurately as possible.

ODC commenced an LED roll out in March 2018. Genesis have been using the registry figures and UML profile to calculate submissions. ODC provided Genesis with a RAMM database extract in May 2019 and plan to provide a monthly report from the database going forward. Genesis will be using this data to revise submissions over the past 14 months. I have assessed the variance between the database figures and those recorded on the registry and estimate that the annual over submission is 149,160 kWh per annum.

On 18 June 2019, the Electricity Authority issued a memo clarifying the memo of 2012 that stated that a monthly snapshot was sufficient to calculate submission from, and confirmed the code requirement to calculate the correct monthly load must:

- take into account when each item of load was physically installed or removed; and
- wash up volumes must take into account where historical corrections have been made to the DUML load and volumes.

Genesis will be working with ODC to determine how this is best achieved.

ODC are utilising the same central management system as Whakatane DC. This is called Telensa. It controls the light burn times and has replaced the networks relays previously used, therefore the fixed burn hours used to calculate submission will not be representative of the actual burn hours. I have recorded non-compliance for the use of the Telensa system without an appropriate profile and recommend that Genesis work with ODC and the Electricity Authority to get a profile to address this.

ODC have completed the LED rollout of the existing lights. There is a project to put infill lighting in. This is at design stage only. The field audit accuracy confirmed this expectation with an estimated accuracy of 103.7%. This falls within the +/- 5% allowable threshold and therefore the database was confirmed to be accurate.

This audit found six non-compliances and makes two recommendations. The future risk rating of 25 indicates that the next audit be completed in three months. I have considered this in conjunction with the Genesis' responses and recommend that the next audit be in seven months to allow time for the actions to be completed before the next audit occurs.

PARTICIPANT RESPONSE

Genesis accepts the short turn around for re-audit, although the database is deemed to be accurate.

Genesis are requesting a 6-9-month revision due to the two major contributing non-compliances being settlement orientated. The 18 points come from the same non-compliance over two sections of the audit regime. This will enable data quality improvements and analysis to be done to verify the asset load with the intent to target the 14 month revision initially then manage the 7&3 month revision periods to meet this compliance requirement as early as possible.

Genesis has already begun communicating the exceptions to the council and expect updates to start flowing in the monthly reporting. Genesis envisage using the dataset for the July volume billing/settlement process, making any adjustments required and inform the council of those corrections required to the database information.

Genesis has contacted the EA regarding the use of the Telensa system to validate burn hours. The Telensa burn hours will be used to calculate the total kWh which will then use Genesis Energy's streetlight profiles to allocate upon submission.