ELECTRICITY INDUSTRY PARTICIPATION CODE
DISTRIBUTED UNMETERED LOAD AUDIT REPORT

VERITEK

For

KIANGAROA FOREST VILLAGE
AND
GENESIS ENERGY

Prepared by: Steve Woods

Date audit commenced: 16 January 2019

Date audit report completed: 29 January 2019

Audit report due date: 01-Jun-18

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EXECUTIVE SUMMARY

This audit of the Kiangaroa Forest Village (**KFV**) Unmetered Streetlights 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.

Genesis have developed a spreadsheet to track the items of load at KFV. This information will be used for submission purposes. Currently the registry is used for submission and the figure is too high, leading to over submission of approx. 11,475 kWh per annum.

KFV manages the streetlights directly. Genesis is liaising with them to establish notification processes for changes.

The field audit was undertaken of the entire KFV spreadsheet, confirming accuracy.

The future risk rating of eight indicates that the next audit be completed in 18 months. I recommend a period of 12 months to reflect that this is a new database and although changes will seldom occur the processes for recording changes are yet to be developed.

AUDIT SUMMARY

NON-COMPLIANCES

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Audit	1.10	16A.26 and 17.295F	Audit not complete by 01/06/18.	Moderate	Low	2	Cleared
Deriving submission information	2.1	11(1) of Schedule 15.3	Over submission of approx. 11,475 kWh per annum.	Weak	Low	3	Identified
Volume information accuracy	3.2	15.2 and 15.37B(c)	Over submission of approx. 11,475 kWh per annum.	Weak	Low	3	Identified
Future Risk Rating						8	

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

ISSUES

Subject	Section	Description	Issue
		Nil	

1. ADMINISTRATIVE

1.1. Exemptions from Obligations to Comply with Code

Code reference

Section 11 of Electricity Industry Act 2010.

Code related audit information

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

Audit observation

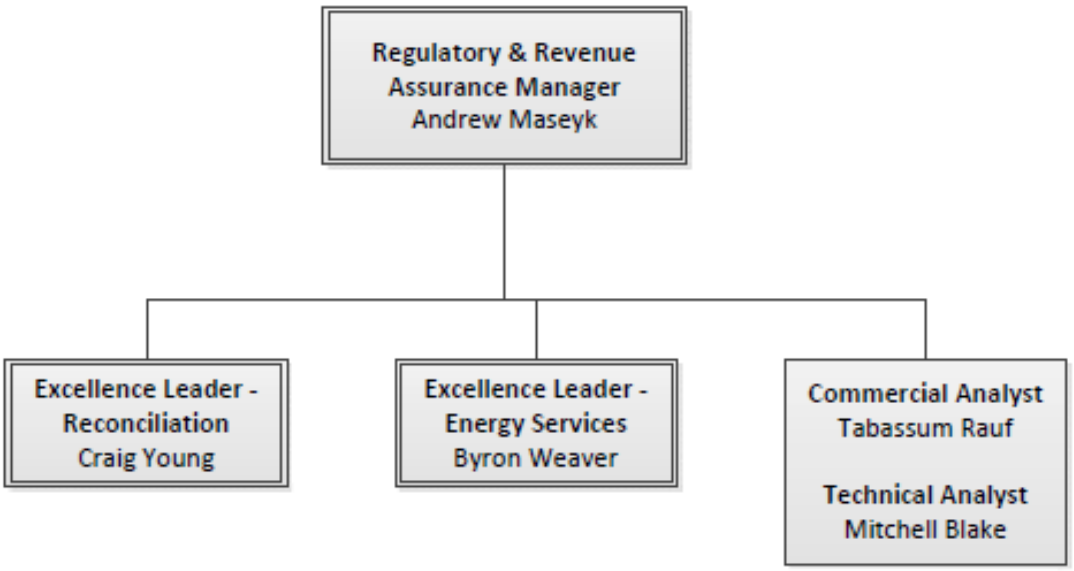
Section 11 of the Electricity Industry Act provides for the Electricity Authority to exempt any participant from compliance with all or any of the clauses.

Audit commentary

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

1.2. Structure of Organisation

Genesis provided a copy of their organisational structure:



1.3. Persons involved in this audit

Auditor:

Name	Title
Steve Woods	Auditor

Other personnel assisting in this audit were:

Name	Title	Company
Craig Young	Excellence Leader – Reconciliation	Genesis Energy

1.4. Hardware and Software

An excel spreadsheet has been constructed to record and track the items of load at KFV. The UML figure from this will be recorded in the registry and used to derive submission.

The spreadsheet is password protected and access to the directory where the spreadsheet is saved is restricted by way of user permissions. Genesis confirmed that this directory is backed up as part of the BAU processes in place.

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	Number of items of load	Database wattage (watts)
1000023046BPC38	Streetlighting	EDG0331	94	3,791
Total			**94**	**3,791**

1.7. Authorisation Received

All information was provided directly by Genesis.

1.8. Scope of Audit

This audit of the KFV 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.

Genesis have developed a spreadsheet to track the items of load at KFV. It is intended that this information will be used for submission, rather than the registry figure, which is currently used.

KFV manages the streetlights directly. Genesis is liaising with them to establish notification processes for changes.

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 field audit was undertaken of the entire KFV spreadsheet, consisting of 94 items of load.

1.9. Summary of previous audit

This is the first audit conducted for this database.

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, but the 1st June 2018 timeframe was not met.

Non-compliance	Description
Audit Ref: 1.10 With: Clause 16A.26 and 17.295F From: 01-Jun-18 To: 28-Jan-19	Audit not complete by 01/06/18. 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 recorded as moderate because the audit was initiated as soon as a database was established. The impact on settlement is minor; therefore, the audit risk rating is low.
Actions taken to resolve the issue	**Completion date** / **Remedial action status**

Genesis Energy did field audit to confirm information provided by Horizon.	01/01/2019	Cleared
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis created asset database and field audit	01/01/2019	

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 and the application of profiles was checked. The database was checked for accuracy.

Audit commentary

Genesis reconciles this DUML load using the UNM profile.

Genesis created a spreadsheet to record all the lamps at KFV. I compared the total kWh derived from the database (assuming an on period of 11.9 hours per day) vs the daily kWh recorded in the registry. The table below shows a discrepancy. There is over submission of approx. 11,475 kWh per annum.

Database daily kWh	45.11
Database annual kWh	16,466
Registry daily kWh	76.55
Registry annual kWh	27,941
Difference	11,475

The field audit confirmed that the database was accurate.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.1 With: Clause 11(1) of Schedule 15.3 From: 06-Oct-16 To: 28-Jan-19	Over submission of approx. 11,475 kWh 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 recorded as weak because there was no database to record the items of load. This is now resolved, and a database has been created. The impact on settlement is minor; therefore, the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis has previously utilized historical information populated on the registry as its kW source. The field audit and database creation has rectified this and Genesis are now utilizing this confirmed dataset for its submissions with historical revisions being corrected.	01/03/2019	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis are maintaining the dataset on behalf of the Kaingaroa village. Genesis will be working with the administration to ascertain any asset maintenance that in completed by them.	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

All items of load have an ICP recorded against them.

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

The database has a road name and pole ID. There are also GPS co-ordinates for each item.

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

The database contains a Lamp Description, Model, Gear Wattage and Lamp Wattage. These fields are populated for every item in the spreadsheet.

The accuracy of wattage and ballasts in the database is discussed in **section 3.1**.

Audit outcome

Compliant

2.5. All load recorded in database (Clause 11(2A) of Schedule 15.3)

Code reference

Clause 11(2A) of Schedule 15.3

Code related audit information

The retailer must ensure that each item of DUML for which it is responsible is recorded in this database.

Audit observation

The field audit was undertaken of the entire database.

Audit commentary

There were no items found that were missing, additional or incorrect in the database.

Audit outcome

Compliant

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

Code reference

Clause 11(3) of Schedule 15.3

Code related audit information

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

Audit observation

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

Audit commentary

Any changes that are made during any given month take effect from the beginning of that month. The information is available which would allow for the total load in kW to be retrospectively derived for any day. On 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 is held by Genesis and processes are being established to notify changes. When any changes to items of load are made, and the spreadsheet will be updated accordingly with a log of what changes have been made to the spreadsheet including a date and name of person updating the spreadsheet.

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 data is contained in a spreadsheet. There is a status field to change items to Inactive if they're not being used and a new row will be added for changes to records.

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 100% field audit was undertaken of the database.

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

Audit commentary

The 100% field audit found confirmed the database to be accurate.

Wattages for all items of load were checked against the published standardised wattage table produced by the Electricity Authority and found to be correct.

Audit outcome

Compliant

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 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.

Genesis created a spreadsheet to record all the lamps at KFV. I compared the total kWh derived from the database (assuming an on period of 11.9 hours per day) vs the daily kWh recorded in the registry. The table below shows a discrepancy. There is over submission of approx. 11,475 kWh per annum.

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Difference	11,475

The field audit confirmed that the database was accurate.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 3.2 With: Clause 15.2 and 15.37B(c) From: 06-Oct-16 To: 28-Jan-19	Over submission of approx. 11,475 kWh 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 recorded as weak because there was no database to record the items of load. This is now resolved, and a database has been created. The impact on settlement is minor; therefore, the audit risk rating is low.		
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Genesis are maintaining the dataset on behalf of the Kaingaroa village. Genesis will be working with the administration to ascertain any asset maintenance that in completed by them.		01/03/2019	

CONCLUSION

Genesis have developed a spreadsheet to track the items of load at KFV. This information will be used for submission purposes. Currently the registry is used for submission and the figure is too high, leading to over submission of approx. 11,475 kWh per annum.

KFV manages the streetlights directly. Genesis is liaising with them to establish notification processes for changes.

The field audit was undertaken of the entire KFV spreadsheet, confirming accuracy.

The future risk rating of eight indicates that the next audit be completed in 18 months. I recommend a period of 12 months to reflect that this is a new database and although changes will seldom occur the processes for recording changes are yet to be developed.

PARTICIPANT RESPONSE