

ELECTRICITY INDUSTRY PARTICIPATION CODE
DISTRIBUTED UNMETERED LOAD AUDIT REPORT

VERITEK

For

KIANGAROA FOREST VILLAGE
AND
GENESIS ENERGY

Prepared by: Rebecca Elliot

Date audit commenced: 26 January 2022

Date audit report completed: 7 February 2022

Audit report due date: 31-May-20

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EXECUTIVE SUMMARY

This audit of the **Kiangoora 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 manages these lights using a spreadsheet to track the items of load at KFV. The last audit database kWh value was 45.11. This was expected to be updated to the registry, but the registry figure was updated to 64.906 kWh on 4 February 2019 and backdated to 1 January 2018. The volume recorded in the database extract provided for this audit has further reduced to 38.37 kWh. This will have resulted in over submission of 60% or an estimated 9,882 kWh per annum.

The field audit found that all but one of the lights have been replaced with solar powered LED lights. I was unable to confirm when these were installed. As there is only one light that is connected to the streetlight circuit there is no need for a DUML database any longer and the ICP should be updated to reflect the one 80W MV light that is still present. This will have resulted in an estimated over submission of 1,915 kWh for each month since the solar powered lights have been installed. I have recommended that Genesis liaise with the customer to confirm the date of installation and correct the submissions accordingly. This will be examined as part of Genesis' next Reconciliation Participant audit.

As there is no distributed unmetered load present no further audits are required.

AUDIT SUMMARY

NON-COMPLIANCES

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Audit	1.10	16A.26	Audit was not completed by due date resulting in over submission not being identified and is now outside the 14-month revision period.	Moderate	Medium	4	Identified
Deriving submission information	2.1	11(1) of Schedule 15.3	<p>Over submission of approx. 9,882 kWh per annum for the period where the distributed unmetered streetlights were present.</p> <p>Over submission of approx. 1,915 kWh for each month since the LED solar powered lights were installed.</p> <p>Some of the over submission is now outside of the 14-month revision period.</p>	Weak	Medium	6	Identified
Database accuracy	3.1	15.2 and 15.37B(b)	Over submission of approx. 1,915 kWh for each month since the LED solar powered lights were installed.	Weak	Medium	6	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Volume information accuracy	3.2	15.2 and 15.37B(c)	Over submission of approx. 9,882 kWh per annum for the period where the distributed unmetered streetlights were present. Over submission of approx. 1,915 kWh for each month since the LED solar powered lights were installed. Some of the over submission is now outside of the 14-month revision period.	Weak	Medium	6	Identified
Future Risk Rating						22	

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
Database Accuracy	3.1	Determine when the solar powered LED lights were installed and correct submissions accordingly.

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

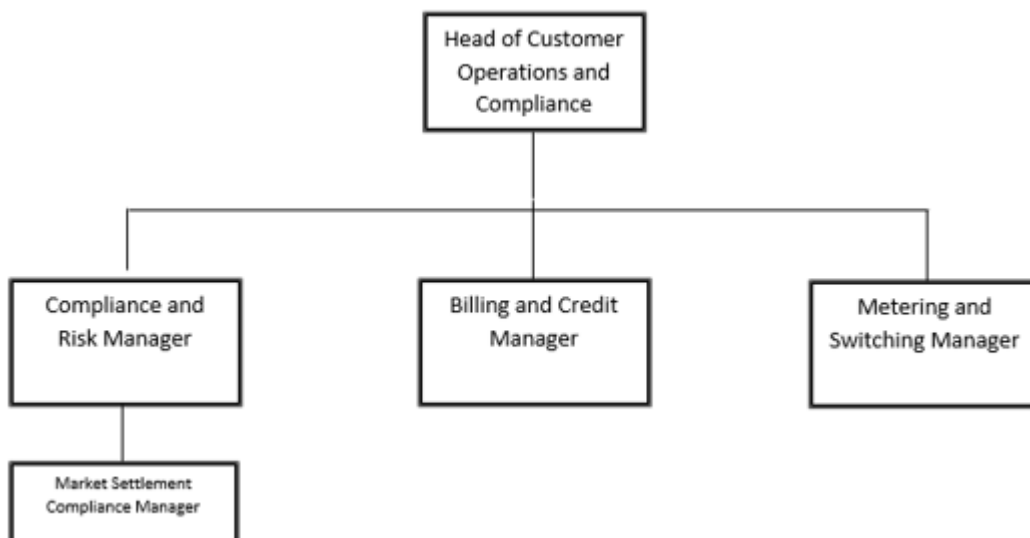
Section 11 of the Electricity Industry Act provides for the Electricity Authority to exempt any participant from compliance with all or any of the clauses.

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
Rebecca Elliot	Auditor

Other personnel assisting in this audit were:

Name	Title	Company
Julia Jones	DUML Data & Stakeholder Lead - Market Settlement Compliance	Genesis Energy

1.4. Hardware and Software

An excel spreadsheet exists to track the items of load at KfV. The UML figure from the registry is 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.

Systems used by the trader to calculate submissions are assessed as part of their reconciliation participant audits.

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	48	3,224
Total			94	3,224

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 manages these lights using a spreadsheet to track the items of load at KfV. This information was expected to be updated to the registry, but this has not been updated since the last audit.

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 48 items of load which are connected.

1.9. Summary of previous audit

The previous audit was completed in February 2019 by Steve Woods of Veritek Limited. This found three non-compliances and made no recommendations. The current status of that audit's findings is detailed below:

Table of Non-Compliance

Subject	Section	Clause	Non-compliance	Status
Audit	1.10	16A.26 and 17.295F	Audit not complete by 01/06/18.	Still existing
Deriving submission information	2.1	11(1) of Schedule 15.3	Over submission of approx. 11,475 kWh per annum.	Still existing
Volume information accuracy	3.2	15.2 and 15.37B(c)	Over submission of approx. 11,475 kWh per annum.	Still existing

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

The next audit was not undertaken by the due date resulting in this audit report being completed late.

Non-compliance	Description		
Audit Ref: 1.10 With: Clause 16A.26 From: 31-May-20 To: 07-Feb-22	Audit was not completed by due date resulting in over submission not being identified and is now outside the 14-month revision period. Potential impact: Medium Actual impact: Medium Audit history: Once previously Controls: Moderate Breach risk rating: 4		
Audit risk rating	Rationale for audit risk rating		
Medium	The controls are recorded as moderate as most streetlight database audits are completed on time but was missed in this instance. The impact on settlement is medium due to the volume of over submission that has occurred due to these audit findings being found late.		
Actions taken to resolve the issue		Completion date	Remedial action status
In relation to the lateness of the audit being conducted this has been impacted due to Covid and therefore resulting in a late submission. Due the lateness of the audit being conducted and no notification from Kaingaroa Forest Village INC regarding the installation of solar LED streetlights Genesis has continued to use the data base from 2019 to reconcile the consumption. As the audit has indicated that the unmetered load has now been reduce to only an 80W Mercury Vapor light connected to the streetlight circuit. Genesis is currently in the process of confirming the installation date of the solar LED lights. Once this has been confirmed Genesis will look to revise our submission.		01/05/2022	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Genesis is currently in the process of confirming the date of the solar LED lights. Once this has been confirmed Genesis will look to revise our submission and update the registry with the correct unmetered load.		01/05/2022	

2. DUMML 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:

- DUMML 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 DUMML load using the UNM profile.

A spreadsheet is used to record all the lamps at KFV. The last audit database kWh value was 45.11. This was expected to be updated to the registry, but the registry figure was updated to 64.906 kWh on 4 February 2019 and backdated to 1 January 2018. The volume recorded in the database extract provided for this audit has further reduced to 38.37 kWh. I have calculated the variance between the current registry figure and that from the spreadsheet and annualised this will have resulted in an estimated over submission of 9,882 kWh per annum.

Database daily kWh	38.37
Database annual kWh	14,003
Registry daily kWh	64.906
Registry annual kWh	23,885
Difference	11,475

The field audit found that all but one of the lights have been replaced with solar powered LED lights. I was unable to confirm when these were installed. As there is only one light that is connected to the streetlight circuit there is no need for a DUMML database any longer and the ICP should be updated to reflect the one 80W MV light that is still present. This will have resulted in an estimated over submission of 1,915 kWh for each month since the solar powered lights have been installed. Annualised this would result in an estimated 23,297 kWh. I recommend in **section 3.1**, that Genesis liaise with the customer to confirm the date of installation and correct the submissions accordingly. Due to the late completion of this audit, some of this volume is now outside of the revision period. This will be examined as part of Genesis' next Reconciliation Participant audit.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 2.1 With: Clause 11(1) of Schedule 15.3 From: 29-Jan-19 To: 07-Feb-22	Over submission of approx. 9,882 kWh per annum for the period where the distributed unmetered streetlights were present. Over submission of approx. 1,915 kWh for each month since the LED solar powered lights were installed. Some of the over submission is now outside of the 14-month revision period. Potential impact: Medium Actual impact: Medium Audit history: Once previously Controls: Weak Breach risk rating: 6		
Audit risk rating	Rationale for audit risk rating		
Medium	The controls are recorded as weak as the database has not been maintained. The impact on settlement assessed to be medium due to the estimated kWh of over submission.		
Actions taken to resolve the issue		Completion date	Remedial action status
Due the lateness of the audit being conducted and no notification from Kaingaroa Forest Village INC regarding the installation of solar LED streetlights Genesis has continued to use the data base from 2019 to reconcile the consumption. As the audit has indicated that the unmetered load has now been reduce to only an 80W Mercury Vapor light connected to the streetlight circuit. Genesis is currently in the process of confirming the installation date of the solar LED lights. Once this has been confirmed Genesis will look to revise our submission.		01/05/2022	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Genesis is currently in the process of confirming the date of the solar LED lights. Once this has been confirmed Genesis will look to revise our submission and update the registry with the correct unmetered load.		01/05/2022	

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 an 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 DUMML database must contain the location of each DUMML item.

Audit observation

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

Audit commentary

As there is only one light remaining, this can be recorded as standard unmetered load and no database is required.

Audit outcome

Not applicable

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

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

Code related audit information

The DUMML database must contain:

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

Audit observation

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

Audit commentary

As there is only one light remaining, this can be recorded as standard unmetered load and no database is required.

Audit outcome

Not applicable

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

All but one of the lights have been replaced with solar powered LED lights. No extra lights were found.

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

As there is only one light remaining, this can be recorded as standard unmetered load and no database is required.

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

Audit outcome

Not applicable

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 DUMML 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

As there is only one light remaining, this can be recorded as standard unmetered load and no database is required.

Audit outcome

Not applicable

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.

Change management processes were examined.

Audit commentary

The field audit found that all but one of the lights have been replaced with solar powered LED lights. I was unable to confirm when these were installed. As there is only one light that is connected to the streetlight circuit there is no need for a DUML database any longer and the ICP should be updated to reflect the one 80W MV light that is still present. This will have resulted in an estimated over submission of 1,915 kWh for each month since the solar powered lights have been installed. Annualised this would result in an estimated 23,297 kWh. I recommend that Genesis liaise with the customer to confirm the date of installation and correct the submissions accordingly. This will be examined as part of Genesis' next Reconciliation Participant audit.

Description	Recommendation	Audited party comment	Remedial action
Deriving submission information	Determine when the solar powered LED lights were installed and correct submissions accordingly.	Genesis is currently in the process of confirming the installation date of the solar LED lights. Once this has been confirmed Genesis will look to revise our submission.	Investigating

As there is only one light remaining, this can be recorded as standard unmetered load and no database is required.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 3.1 With: Clauses 15.2 and 15.37B(b) From: 29-Jan-19 To: 07-Feb-22	Over submission of approx. 1,915 kWh for each month since the LED solar powered lights were installed. 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 recorded as weak as the database has not been maintained. The impact on settlement assessed to be medium due to the estimated kWh of over submission.		
Actions taken to resolve the issue		Completion date	Remedial action status
Due the lateness of the audit being conducted and no notification from Kaingaroa Forest Village INC regarding the installation of solar LED streetlights Genesis has continued to use the data base from 2019 to reconcile the consumption. As the audit has indicated that the unmetered load has now been reduce to only an 80W Mercury Vapor light connected to the streetlight circuit. Genesis is currently in the process of confirming the installation date of the solar LED lights. Once this has been confirmed Genesis will look to revise our submission.		01/05/2022	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Genesis is currently in the process of confirming the date of the solar LED lights. Once this has been confirmed Genesis will look to revise our submission and update the registry with the correct unmetered load.		01/05/2022	

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.

A spreadsheet is used to record all the lamps at KfV. The last audit database kWh value was 45.11. This was expected to be updated to the registry, but the registry figure was updated to 64.906 kWh on 4 February 2019 and backdated to 1 January 2018. The volume recorded in the database extract provided for this audit has further reduced to 38.37 kWh. I have calculated the variance between the current registry figure and that from the spreadsheet and annualised this will have resulted in an estimated over submission of 9,882 kWh per annum.

Database daily kWh	38.37
Database annual kWh	14,003
Registry daily kWh	64.906
Registry annual kWh	23,885
Difference	11,475

The field audit found that all but one of the lights have been replaced with solar powered LED lights. I was unable to confirm when these were installed. As there is only one light that is connected to the streetlight circuit there is no need for a DUML database any longer and the ICP should be updated to reflect the one 80W MV light that is still present. This will have resulted in an estimated over submission of 1,915 kWh for each month since the solar powered lights have been installed. Annualised this would result in an estimated 23,297 kWh. I recommend in **section 3.1**, that Genesis liaise with the customer to confirm the date of installation and correct the submissions accordingly. Due to the late completion of this audit, some of this volume is now outside of the revision period. This will be examined as part of Genesis' next Reconciliation Participant audit.

Audit outcome

Non-compliant

Non-compliance	Description		
<p>Audit Ref: 3.2 With: Clause 15.2 and 15.37B(c)</p> <p>From: 29-Jan-19 To: 07-Feb-22</p>	<p>Over submission of approx. 9,882 kWh per annum for the period where the distributed unmetered streetlights were present.</p> <p>Over submission of approx. 1,915 kWh for each month since the LED solar powered lights were installed.</p> <p>Some of the over submission is now outside of the 14-month revision period.</p> <p>Potential impact: Medium Actual impact: Medium Audit history: Once previously Controls: Weak Breach risk rating: 6</p>		
Audit risk rating	Rationale for audit risk rating		
<p>Medium</p>	<p>The controls are recorded as weak as the database has not been maintained.</p> <p>The impact on settlement assessed to be medium due to the estimated kWh of over submission.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>Due the lateness of the audit being conducted and no notification from Kaingaroa Forest Village INC regarding the installation of solar LED streetlights Genesis has continued to use the data base from 2019 to reconcile the consumption.</p> <p>As the audit has indicated that the unmetered load has now been reduce to only an 80W Mercury Vapor light connected to the streetlight circuit. Genesis is currently in the process of confirming the installation date of the solar LED lights. Once this has been confirmed Genesis will look to revise our submission.</p>		<p>01/05/2022</p>	<p>Identified</p>
Preventative actions taken to ensure no further issues will occur		Completion date	
<p>Genesis is currently in the process of confirming the date of the solar LED lights. Once this has been confirmed Genesis will look to revise our submission and update the registry with the correct unmetered load.</p>		<p>01/05/2022</p>	

CONCLUSION

Genesis manages these lights using a spreadsheet to track the items of load at KFV. The last audit database kWh value was 45.11. This was expected to be updated to the registry, but the registry figure was updated to 64.906 kWh on 4 February 2019 and backdated to 1 January 2018. The volume recorded in the database extract provided for this audit has further reduced to 38.37 kWh. This will have resulted in over submission of 60% or an estimated 9,882 kWh per annum.

The field audit found that all but one of the lights have been replaced with solar powered LED lights. I was unable to confirm when these were installed. As there is only one light that is connected to the streetlight circuit there is no need for a DUMML database any longer and the ICP should be updated to reflect the one 80W MV light that is still present. This will have resulted in an estimated over submission of 1,915 kWh for each month since the solar powered lights have been installed. I have recommended that Genesis liaise with the customer to confirm the date of installation and correct the submissions accordingly. This will be examined as part of Genesis' next Reconciliation Participant audit.

PARTICIPANT RESPONSE

Due the lateness of the audit being conducted and no notification from Kaingaroa Forest Village INC regarding the installation of solar LED streetlights Genesis has continued to use the data base from 2019 to reconcile the consumption.

As the audit has indicated there has now been solar LED lights been installed which has resulted in a reduction to the unmetered load. Genesis is currently in the process of confirming the installation date of the solar LED lights. Once this has been confirmed Genesis will look to revise our submission.