ELECTRICITY INDUSTRY PARTICIPATION CODE
DISTRIBUTED UNMETERED LOAD AUDIT REPORT

For

NZTA WAIMAKARIRI AND CONTACT ENERGY (CTCS)

NZBN: 9429038549977

Prepared by: Rebecca Elliot

Date audit commenced: 19 April 2022

Date audit report completed: 2 June 2022

Audit report due date: 18 April 2022

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EXECUTIVE SUMMARY

This audit of the **NZTA Mainpower** DUML database and processes was conducted at the request of **Contact Energy (Contact)** 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.

Contact has been using a report from the Mainpower database from April 2021. This database is no longer being maintained as Mainpower is no longer engaged as the streetlighting maintenance contractor, therefore they are no longer being advised of any changes to maintain the database. However, the Mainpower database was audited as this is the last extract that was provided to the trader and Contact have advised they will continue to use this information until they are able to source a current database.

The field audit was undertaken of a statistical sample of 127 items of load on 25 April 2022. Non-compliance is recorded because the potential error is greater than 5.0%:

- in absolute terms the installed capacity is estimated to be 6 kW higher than the database indicates,
- there is a 95% level of confidence that the installed capacity be equal to or be up to 16 kW higher than the database,
- in absolute terms, total annual consumption is estimated to be 25,300 kWh higher than the DUML database indicates, and
- there is a 95% level of confidence that the annual consumption is equal to or up to 70,400 kWh p.a. higher than the database indicates.

Contact reconciles this DUML load using the RPS profile. Simply Energy on behalf of Contact submit the monthly kW values under the CTCS code.

I checked the March 2022 submission information for ICPs 0000366461MPAD4, 0000366463MPA51, 0000366464MP79B, 0000366465MPBDE and 0000366466MP71E and confirmed that the calculation methodology was correct. I found a difference between the wattage applied by Contact and the database extract I received for ICP 0000366462MP614 as detailed below:

ICP Number	Database monthly kWh value	CTCS volume submitted	kWh volume difference
0000366462MP614	1214.54	11.78	1214.54

This error will be resulting in an estimated under submission of 1,215 kWh for the month of March.

This audit found six non-compliances, and no recommendations were raised. The future risk rating of 41 indicates that the next audit be completed in three months. I have considered this in conjunction with Contact's comments and recommend that the next audit be in three months.

The matters raised are detailed below:

AUDIT SUMMARY

NON-COMPLIANCES

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Deriving submission information	2.1	11(1) of Schedule 15.3	The monthly database used for submission is no longer being maintained so the monthly volumes being calculated do not take into account any changes. In absolute terms, total annual consumption is estimated to be 25,300 kWh higher than the DUML database indicates. Submission error resulting in an estimated under submission of 1,215 kWh for the month of March. 13 items of load with incorrect wattage, resulting in a very minor estimated over submission of 265kWh p.a. based on 4,271 burn hours. Two items of load with lamp type or wattage recorded, resulting in an estimated under submission of 982kWh p.a. based on 4,271 burn hours.	None	Medium	8	Identified
Location of items of load	2.3	11(2)(b) of Schedule 15.3	Location information insufficient to locate at least 51 items of load.	None	Low	5	Investigating
Description and capacity of load	2.4	11(2)(c) and (d) of Schedule 15.3	Two items of load with lamp type or wattage recorded, resulting in an estimated under submission of 982kWh p.a. based on 4,271 burn hours.	None	Low	5	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
All load recorded in database	2.5	11(2A) of Schedule 15.3	Four additional lights found in the field from the 127 items of load sampled.	None	Low	5	Identified
Database accuracy	3.1	15.2 and 15.37B(	In absolute terms, total annual consumption is estimated to be 25,300 kWh higher than the DUML database indicates. 13 items of load with incorrect wattage, resulting in a very minor estimated over submission of 265kWh p.a. based on 4,271 burn hours. Two items of load with lamp type or wattage recorded, resulting in an estimated under submission of 982kWh p.a. based on 4,271 burn hours. 51 items of load with insufficient information to locate these. No change management in place as the Mainpower database is no longer being maintained.	None	Medium	8	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)	The monthly database used for submission is no longer being maintained so the monthly volumes being calculated do not take into account any changes. In absolute terms, total annual consumption is estimated to be 25,300 kWh higher than the DUML database indicates. Submission error resulting in an estimated under submission of 1,215 kWh for the month of March. 13 items of load with incorrect wattage, resulting in a very minor estimated over submission of 265kWh p.a. based on 4,271 burn hours. Two items of load with lamp type or wattage recorded, resulting in an estimated under submission of 982kWh p.a. based on 4,271 burn hours.	None	Medium	8	Identified
					Future Risk Rating	**41**	

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

RECOMMENDATIONS

Subject	Section	Description	Recommendation
		Nil	

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

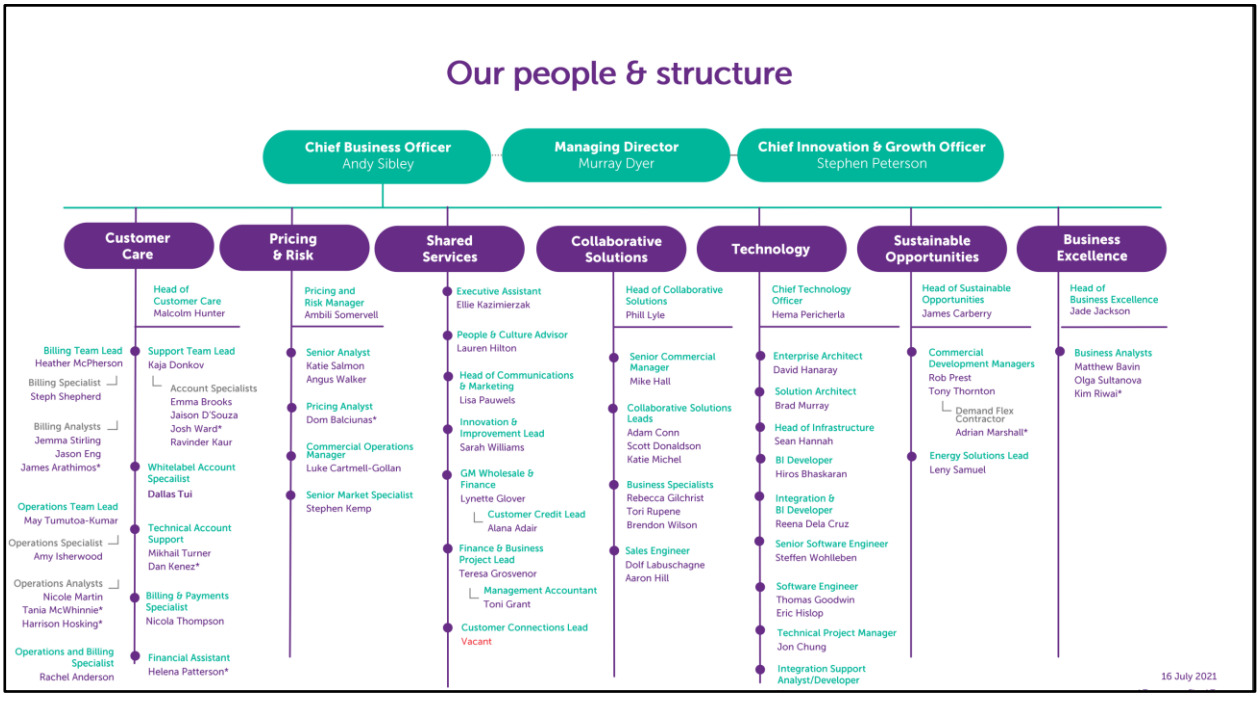
The Electricity Authority's website was reviewed to identify any exemptions relevant to the scope of this audit.

Audit commentary

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

1.2. Structure of Organisation

Contact Energy provided a copy of their organisational structure.



1.3. Persons involved in this audit

Auditors:

Name	Company	Role
Rebecca Elliot	Veritek Limited	Lead Auditor
Claire Stanley	Veritek Limited	Supporting Auditor

Other personnel assisting in this audit were:

Name	Title	Company
Luke Cartmell-Gollan	Commercial Operations Manager	Contact Energy

1.4. Hardware and Software

Mainpower are no longer the field contractor and are no longer maintaining this DUML load in their database.

The Mainpower database was audited as this is the last extract that was provided to the trader in April 2021. A new database source needs to be sourced going forward.

Systems used by the trader and their agent 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	Profile	Number of items of load	Database wattage (watts)
0000366461MPAD4	CUL0331 STREET LIGHTS	CUL0331	RPS	54	9,735
0000366463MPA51	KKA0331 STREET LIGHTS	KKA0331	RPS	115	18,855
0000366462MP614	KAI0111 STREET LIGHTS	KAI0111	RPS	429	104,102
0000366464MP79B	SBK0331 STREET LIGHTS	SBK0331	RPS	32	6,061
0000366465MPBDE	WPR0331 STREET LIGHTS	WPR0331	RPS	90	20,985
0000366466MP71E	STREETLIGHTS WPR0661	WPR0661	RPS	60	14,352
0000304742MP95A*	STREETLIGHTS ASY0111	ASY0111	RPS	1	278
Total				**781**	**174,368**

*ICP 0000304742MP95A has one light associated, it is managed as standard unmetered load.

1.7. Authorisation Received

All information was provided directly by Contact.

1.8. Scope of Audit

This audit of the NZTA Mainpower DUML database and processes was conducted at the request of Contact, 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.

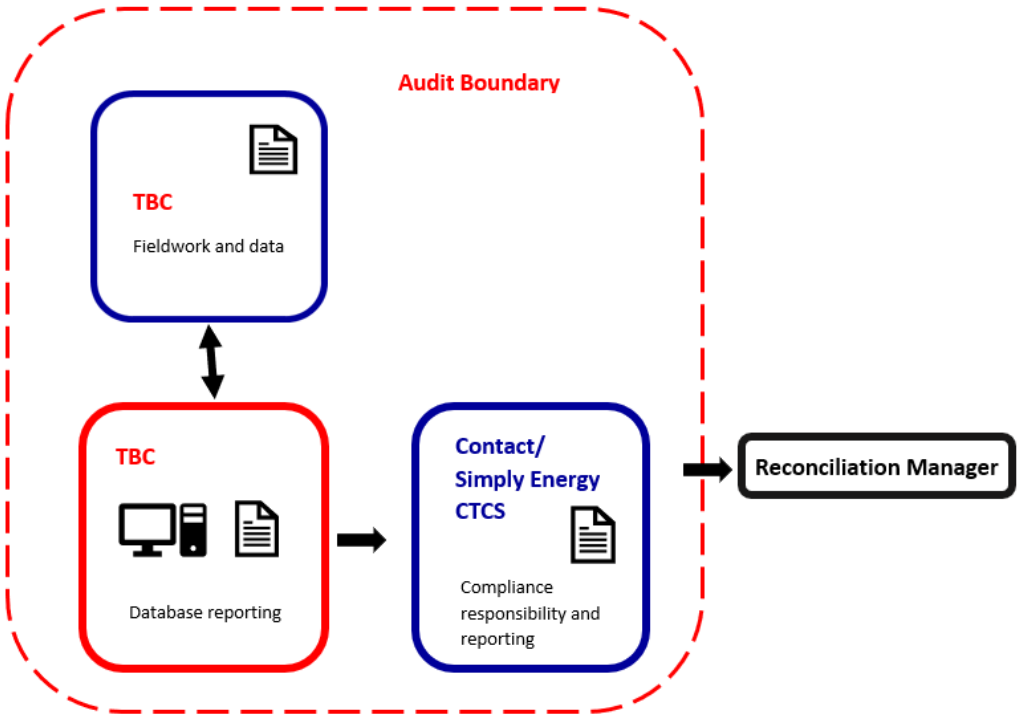
The audit was conducted in accordance with the audit guidelines for DUML audits version 1.1.

The items of load are located on the Mainpower network. Mainpower is no longer engaged as the streetlighting maintenance contractor, therefore they are no longer being advised of any changes to maintain the database. The Mainpower database was audited as this is the last extract that was provided to the trader by Mainpower.

Contact is using a report last provided by Mainpower in April 2021 to calculate submissions. Contact have advised they will continue to use this information until they are able to get updated information.

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 diagrams below show the audit boundaries for clarity.

The diagram below shows the flow of information and the audit boundary for clarity.



The field audit was undertaken of a statistical sample of 127 items of load on 25th April 2022.

1.9. Summary of previous audit

The previous audit was conducted in May 2021 by Rebecca Elliot of Veritek. The current status of the issues raised in that audit are detailed below.

Table of Non-compliance

Subject	Section	Clause	Non-Compliance	Status
Deriving submission information	2.1	11(1) of Schedule 15.3	Estimated 274,918.08 kWh of under submission since switching to the CTCS profile from October 2020 up to February 2021.	Cleared
Location of items of load	2.3	11(2)(b) of Schedule 15.3	Location information insufficient to locate at least 51 items of load.	Still existing
Description and capacity of load	2.4	11(2)(c) and (d) of Schedule 15.3	41 lights with no wattage recorded resulting in under submission of 28,047 kWh. [based on burn 4271 burn hours]	Still remaining for 2 lamps
Database accuracy	3.1	15.2 and 15.37B(	41 lights with no wattage recorded resulting in under submission of 28,047 kWh. [based on burn 4271 burn hours] Ten lamps have ballast added where this is not required, resulting in a very minor estimated under submission of 40W or 171 kWh p.a. based on 4,271 burn hours. 51 items of load with insufficient information to locate these. Load changes no longer tracked in the Mainpower database.	Still remaining for 2 lamps Still remaining Still remaining Still remaining
Volume information accuracy	3.2	15.2 and 15.37B(c)	Estimated 274,918.08 kWh of under submission since switching to the CTCS profile from October 2020 up to February 2021.	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 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

Contact requested Veritek to undertake this streetlight audit.

Audit commentary

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

Audit outcome

Compliant

2. DUML DATABASE REQUIREMENTS

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

Code reference

Clause 11(1) of Schedule 15.3

Code related audit information

The retailer must ensure the:

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

Audit observation

The process for calculation of consumption was examined.

Audit commentary

Contact reconciles this DUML load using the RPS profile. Simply Energy on behalf of Contact submit the monthly kW values under the CTCS code.

I checked the March 2022 submission information for ICPs 0000366461MPAD4, 0000366463MPA51, 0000366464MP79B, 0000366465MPBDE and 0000366466MP71E and confirmed that the calculation methodology was correct. I found a difference between the wattage applied by Contact and the database extract I received for ICP 0000366462MP614 as detailed below:

ICP Number	Database monthly kWh value	CTCS volume submitted	kWh volume difference
0000366462MP614	1214.54	11.78	1214.54

This was due to human error and will have resulted in an estimated under submission of 1,215 kWh for the month of March. This will be corrected through the revision process but is recorded as non-compliance.

ICP 0000304742MP95A has one light associated with it and is managed as standard unmetered load.

The field audit against the database quantities found that the database is not confirmed as accurate with a 95% level of confidence resulting in an estimated under submission of 25,300 kWh per annum. This is detailed in **section 3.1.**

Examination of the database found:

- 13 incorrect lamp wattages and or ballasts resulting in a very minor estimated over submission of 265 kWh per annum, and
- two lights were found with no lamp type or wattage recorded resulting a very minor estimated under submission of 265 kWh per annum.

Mainpower is no longer engaged as the streetlighting maintenance contractor, therefore they are no longer being advised of any changes to maintain the database.

Previously Simply Energy managed unmetered loads by creating dummy meters. If there was no dummy meter in their DA software, then the volume is estimated at 55kWh/day. This issue was resolved via a material change audit in August 2021 and historic submission was corrected via the usual reconciliation revision processes.

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.

The monthly report is no longer being provided as the database is not being maintained therefore any changes made in the field since April 2021 will not be captured.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.1 With: Clause 11(1) of Schedule 15.3 From: 02-Apr-21 To: 25-Apr-22	The monthly database used for submission is no longer being maintained so the monthly volumes being calculated do not take into account any changes. In absolute terms, total annual consumption is estimated to be 25,300 kWh higher than the DUML database indicates. Submission error resulting in an estimated under submission of 1,215 kWh for the month of March. 13 items of load with incorrect wattage, resulting in a very minor estimated over submission of 265kWh p.a. based on 4,271 burn hours. Two items of load with lamp type or wattage recorded, resulting in an estimated under submission of 982kWh p.a. based on 4,271 burn hours. Potential impact: High Actual impact: Medium Audit history: Twice previously Controls: None Breach risk rating: 8
Audit risk rating	**Rationale for audit risk rating**
Medium	The controls were rated as none, as there is no current database being provided to reconcile this load. The impact is assessed to be medium due to the level of submission inaccuracy.

Actions taken to resolve the issue	Completion date	Remedial action status
The submission error has been corrected. Additionally, all DUML ICPs have been moved to the DST profile, which has a set of controls more tailored to streetlights to help mitigate issues of this nature in future.	31/5/2022	Identified
Dataset being used for submission calculation will be updated to include/remove these items of load identified by the field audit.	15/6/2022	
Preventative actions taken to ensure no further issues will occur	**Completion date**	
NZTA have been engaged again about the lack of controls in managing the database and have indicated that a solution internally should have funding within 6-9 months' time.	31/3/2023	

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 is recorded for each item of load.

Audit commentary

An ICP is recorded for each item of load. The Mainpower database contained a customer number that is linked to the relevant ICP in the customer table in Access.

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

The database contains the street, a description of the location and GPS coordinates.

61 items of load do not have GPS details recorded, 51 of these records do not have a unique location description, meaning the location information is insufficient to physically identify the item of load.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.3 With: Clause 11(2)(b) of Schedule 15.3 From: 02-Apr-21 To: 25-Apr-22	Location information insufficient to locate at least 51 items of load. Potential impact: Low Actual impact: Low Audit history: Three times previously Controls: None Breach risk rating: 5
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as none as this database is no longer being maintained. The impact is minor; therefore, the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
		Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
NZTA have been engaged again about the lack of controls in managing the database and have indicated that a solution internally should have funding within 6-9 months' time.	31/3/2023	

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 two records for wattage, firstly the lamp wattage and secondly the gear wattage, which represents ballast losses. Analysis of the database found a two errors, as follows:

Quantity	Finding
2	Missing lamp type and wattage

If it is assumed that these lights are 115W LED, then under submission of 982kWh p.a. is estimated (based on 4271 hours per annum).

The accuracy of lamp descriptions, wattages and ballasts is recorded in **section 3.1**.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.4 With: Clause 11(2)(c) and (d) of Schedule 15.3 From: 02-Apr-21 To: 25-Apr-22	Two items of load with lamp type or wattage recorded, resulting in an estimated under submission of 982kWh p.a. based on 4,271 burn hours. Potential impact: Low Actual impact: Low Audit history: Once Controls: None Breach risk rating: 5
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as none as this database is no longer being maintained. The impact on settlement and participants is minor; therefore, the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
Dataset being used for submission calculation will be updated to include wattages for these items of load.	15/6/2022	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
NZTA have been engaged again about the lack of controls in managing the database and have indicated that a solution internally should have funding within 6-9 months' time.	31/3/2023	

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 127 items of load on 25 April 2022.

Audit commentary

The field audit discrepancies are detailed in the table below:

Address	Database count	Field count	Count difference	Wattage difference	Comments
LINESIDE RD OVERPASS (SOUTH SIDE LINESIDE RD)	19	21	+2		2 x additional x 250W HPS not recorded in the database but located in the field
CARTERS RD (SH1)	63	64	3 (-1, +2)		1 x 150W HPS recorded in the database but not located in the field. 2 additional x 250W HPS not recorded in the database but located in the field.
TOTAL	**781**	**784**	**5(+4, -1)**	-	

There were four additional items of load found in the field of 127 items of load sampled. 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: 02-Apr-21 To: 25-Apr-22	Four additional lights found in the field from the 127 items of load sampled. Potential impact: Medium Actual impact: Low Audit history: None Controls: None Breach risk rating: 5
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as none as the database is not being maintained. The impact is assessed to be medium due to the number of additional lights found in the field for the size of the database.

Actions taken to resolve the issue	**Completion date**	**Remedial action status**
Dataset being used for submission calculation will be updated to include/remove these items of load identified by the field audit.	15/6/2022	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
NZTA have been engaged again about the lack of controls in managing the database and have indicated that a solution internally should have funding within 6-9 months' time.	31/3/2023	

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 database functionality achieved compliance with the code when it was being managed by Mainpower.

Audit outcome

Compliant

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

Code reference

Clause 11(4) of Schedule 15.3

Code related audit information

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

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

Audit observation

The database was checked for audit trails.

Audit commentary

The database had a complete and compliant audit trail when it was being managed by Mainpower.

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	NZTA Mainpower
Strata	The database contains items of load for NZTA lighting on the Mainpower network The processes for the management of all NZTA lighting is the same, but I decided to create three strata, as follows: 1. Kaiapoi, 2. Woodend, Amberly, and 3. Small town.
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 12 sub-units.
Total items of load	127 items of load were checked.

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

Audit commentary

Database accuracy based on the field audit

A field audit was conducted of a statistical sample of 127 items of load. The "database auditing tool" was used to analyse the results, which are shown in the table below.

Result	Percentage	Comments
The point estimate of R	103.4	Wattage from survey is higher than the database wattage by 3.4%
R_L	100.0	With a 95% level of confidence, it can be concluded that the error could be between zero and 9.5% higher.
R_H	109.5	

These results were categorised in accordance with the "Distributed Unmetered Load Statistical Sampling Audit Guideline", effective from 1 February 2019 and the table below shows that Scenario C (detailed below) applies.

The conclusion from Scenario C is that the variability of the sample results across the strata means that the true wattage (installed in the field) could be up to 9.1% higher than the wattage recorded in the DUML database. Non-compliance is recorded because the potential error is greater than 5.0%.

In absolute terms the installed capacity is estimated to be 6 kW higher than the database indicates.

There is a 95% level of confidence that the installed capacity is be equal to or be up to 16 kW higher than the database.

In absolute terms, total annual consumption is estimated to be 25,300 kWh higher than the DUML database indicates.

There is a 95% level of confidence that the annual consumption is equal to or up 70,400 kWh p.a. higher than the database indicates.

Scenario	Description
A - **Good accuracy, good precision**	This scenario applies if: (a) R_H is less than 1.05; and (b) R_L is greater than 0.95 The conclusion from this scenario is that: (a) the best available estimate indicates that the database is accurate within +/- 5 %; and (b) this is the best outcome.
B - **Poor accuracy, demonstrated with statistical significance**	This scenario applies if: (a) the point estimate of R is less than 0.95 or greater than 1.05 (b) as a result, either R_L is less than 0.95 or R_H is greater than 1.05. There is evidence to support this finding. In statistical terms, the inaccuracy is statistically significant at the 95% level
C - **Poor precision**	This scenario applies if: (a) the point estimate of R is between 0.95 and 1.05 (b) R_L is less than 0.95 and/or R_H is greater than 1.05 The conclusion from this scenario is that the best available estimate is not precise enough to conclude that the database is accurate within +/- 5 %

Lamp description and capacity accuracy

I checked the wattage being applied in the database and found that ten lamps had a discrepancy. This is detailed in the table below:

Model	Expected Wattage	Database Total Lamp Wattage/Ballast	Variance	Database quantity	Estimated annual kWh effect on consumption	Comments
NXT 72M 350 mA	78W	82W	+4W	10	40	LED- no ballast expected
150W HPS	168W	176W	+8W	3	24	Lamp wattage recorded incorrectly
TOTAL				13	62	

This will be resulting in a very minor estimated over submission of 265 kWh per annum (based on 4271 hours per annum).

As detailed in **section 2.4:**

Quantity	Finding
2	Missing lamp type and wattage

If it is assumed that these lights are 115W LED, then under submission of 982kWh p.a. is estimated (based on 4271 hours per annum).

Address Location accuracy

As discussed in **section 2.3**, 61 items of load do not have GPS details recorded, 51 of these records do not have a unique location description, meaning the location information is insufficient to physically identify the item of load.

Change management process findings

This audit is assessing the last extract provided by Mainpower in April 2021. Mainpower is no longer engaged as the streetlighting maintenance contractor, therefore they are no longer being advised of any changes to maintain the database. This is recorded as a non-compliance.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.1 With: Clause 15.2 and 15.37B(b) From: 02-Apr-21 To: 25-Apr-22	In absolute terms, total annual consumption is estimated to be 25,300 kWh higher than the DUML database indicates. 13 items of load with incorrect wattage, resulting in a very minor estimated over submission of 265kWh p.a. based on 4,271 burn hours. Two items of load with lamp type or wattage recorded, resulting in an estimated under submission of 982kWh p.a. based on 4,271 burn hours. 51 items of load with insufficient information to locate these. No change management in place as the Mainpower database is no longer being maintained. Potential impact: High Actual impact: Medium Audit history: None Controls: None Breach risk rating: 8
Audit risk rating	**Rationale for audit risk rating**
Medium	Controls are rated as none as this database is no longer being maintained. The impact is assessed to be medium, based on the potential kWh variances detailed above but this will increase until an alternative database is found to manage this load.

Actions taken to resolve the issue	Completion date	Remedial action status
Dataset being used for submission calculation will be updated to include/remove these items of load identified by the field audit.	15/6/2022	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
NZTA have been engaged again about the lack of controls in managing the database and have indicated that a solution internally should have funding within 6-9 months' time.	31/3/2023	

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

Contact reconciles this DUML load using the RPS profile. Simply Energy on behalf of Contact submit the monthly kW values under the CTCS code.

I checked the March 2022 submission information for ICPs 0000366461MPAD4, 0000366463MPA51, 0000366464MP79B, 0000366465MPBDE and 0000366466MP71E and confirmed that the calculation methodology was correct. I found a difference between the wattage applied by Contact and the database extract I received for ICP 0000366462MP614 as detailed below:

ICP Number	Database monthly kWh value	CTCS volume submitted	kWh volume difference
0000366462MP614	1214.54	11.78	1214.54

This was due to human error and will have resulted in an estimated under submission of 1,215 kWh for the month of March. This will be corrected through the revision process but is recorded as non-compliance.

ICP 0000304742MP95A has one light associated with it and is managed as standard unmetered load.

The field audit against the database quantities found that the database is not confirmed as accurate with a 95% level of confidence resulting in an estimated under submission of 25,300 kWh per annum. This is detailed in **section 3.1.**

Examination of the database found:

- 13 incorrect lamp wattages and or ballasts resulting in a very minor estimated over submission of 265 kWh per annum, and
- two lights were found with no lamp type or wattage recorded resulting a very minor estimated under submission of 265 kWh per annum.

Mainpower is no longer engaged as the streetlighting maintenance contractor, therefore they are no longer being advised of any changes to maintain the database.

Previously Simply Energy managed unmetered loads by creating dummy meters. If there was no dummy meter in their DA software, then the volume is estimated at 55kWh/day. This issue was resolved via a material change audit in August 2021 and historic submission was corrected via the usual reconciliation revision processes.

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.

The monthly report is no longer being provided as the database is not being maintained therefore any changes made in the field since April 2021 will not be captured.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.2 With: Clause 15.2 and 15.37B(c)) From: 02-Apr-21 To: 25-Apr-22	The monthly database used for submission is no longer being maintained so the monthly volumes being calculated do not take into account any changes. In absolute terms, total annual consumption is estimated to be 25,300 kWh higher than the DUML database indicates. Submission error resulting in an estimated under submission of 1,215 kWh for the month of March. 13 items of load with incorrect wattage, resulting in a very minor estimated over submission of 265kWh p.a. based on 4,271 burn hours. Two items of load with lamp type or wattage recorded, resulting in an estimated under submission of 982kWh p.a. based on 4,271 burn hours. Potential impact: High Actual impact: High Audit history: Twice previously Controls: None Breach risk rating: 8
Audit risk rating	**Rationale for audit risk rating**
Medium	The controls were rated as none, because they were not sufficient to ensure that submission data is calculated accurately. The impact is assessed to be medium due to the level of submission inaccuracy.

Actions taken to resolve the issue	Completion date	Remedial action status
The submission error has been corrected. Additionally, all DUML ICPs have been moved to the DST profile, which has a set of controls more tailored to streetlights to help mitigate issues of this nature in future.	31/5/2022	Identified
Dataset being used for submission calculation will be updated to include/remove these items of load identified by the field audit.	15/6/2022	
Preventative actions taken to ensure no further issues will occur	**Completion date**	
NZTA have been engaged again about the lack of controls in managing the database and have indicated that a solution internally should have funding within 6-9 months' time.	31/3/2023	

CONCLUSION

Contact has been using a report from the Mainpower database from April 2021. This database is no longer being maintained as Mainpower is no longer engaged as the streetlighting maintenance contractor, therefore they are no longer being advised of any changes to maintain the database. However, the Mainpower database was audited as this is the last extract that was provided to the trader and Contact have advised they will continue to use this information until they are able to source a current database.

The field audit was undertaken of a statistical sample of 127 items of load on 25 April 2022. Non-compliance is recorded because the potential error is greater than 5.0%:

- in absolute terms the installed capacity is estimated to be 6 kW higher than the database indicates,
- there is a 95% level of confidence that the installed capacity be equal to or be up to 16 kW higher than the database,
- in absolute terms, total annual consumption is estimated to be 25,300 kWh higher than the DUML database indicates, and
- there is a 95% level of confidence that the annual consumption is equal to or up to 70,400 kWh p.a. higher than the database indicates.

Contact reconciles this DUML load using the RPS profile. Simply Energy on behalf of Contact submit the monthly kW values under the CTCS code.

I checked the March 2022 submission information for ICPs 0000366461MPAD4, 0000366463MPA51, 0000366464MP79B, 0000366465MPBDE and 0000366466MP71E and confirmed that the calculation methodology was correct. I found a difference between the wattage applied by Contact and the database extract I received for ICP 0000366462MP614 as detailed below:

ICP Number	Database monthly kWh value	CTCS volume submitted	kWh volume difference
0000366462MP614	1214.54	11.78	1214.54

This error will be resulting in an estimated under submission of 1,215 kWh for the month of March.

This audit found six non-compliances, and no recommendations were raised. The future risk rating of 41 indicates that the next audit be completed in three months. I have considered this in conjunction with Contact's comments and recommend that the next audit be in three months.

PARTICIPANT RESPONSE

Contact/Simply Energy continues to work with NZTA to find a solution to the core issue here, which is that the DUML database is not being maintained. NZTA have this year (2022) has engaged a consultant to act as their Energy Manager nationwide, however funding does not currently extend to DUML and as such it may be another 6-9 months before we see some real improvements in the audit score for this DUML audit.