ELECTRICITY INDUSTRY PARTICIPATION CODE
DISTRIBUTED UNMETERED LOAD AUDIT REPORT

VERITEK

For

CHRISTCHURCH CITY COUNCIL UNMETERED TRAFFIC LIGHTS AND CONTACT ENERGY LIMITED NZBN:9429038549977

Prepared by: Rebecca Elliot

Date audit commenced: 7 March 2022

Date audit report completed: 28 March 2022

Audit report due date: 18 April 2022

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EXECUTIVE SUMMARY

This audit of the **Christchurch City Council's Christchurch Transport Operation Centre (CTOC)** Unmetered Traffic Light DUML database and processes was conducted at the request of **Contact Energy Limited** (**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.

Traffic light data is maintained in RTOAD (Real Time Operations Asset Database) by CTOC. RTOAD records the quantity of each equipment type, including vehicle lanterns of various types and wattages, pedestrian lanterns of various types and wattages, illuminated signs, speed zone signs and traffic safety cameras at each intersection. The wattage for each item is multiplied by the estimated number of hours on per day, power level, and kW per hour to give a daily kWh value. The hours and power level are based on historic metering information, from when a sample of lights were metered to determine these values.

The load is submitted as NHH using the UML profile for ICPs 0007102602RN872, 007102603RN437 and 0007102604RN9FD. The profile for ICP 00000298513MPF38 was updated from RPS UML to RPS on 26 November 2021 as part of the MEP nomination. A meter was installed on 29 November 2021. I checked all submissions from November 2021 to February 2022 and found the volume of metered and unmetered appears to be incorrect:

ICP	Profile	Nov 21	Dec 21	Jan 22	Feb 22
0000298513MPF38	UML	179	169.84	0	149.24
	RPS	0	21.99	272.85	213.91
Total kWh per month		**179**	**191.83**	**272.85**	**363.15**

The metered volumes are missing from the November 2021 submission and the unmetered volume is missing from the January 2022 submission.

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.

The field audit confirmed that the database accuracy fell within the allowable thresholds.

Five non-compliances were identified, and this audit makes one recommendation. The future risk rating of nine indicates that the next audit be completed in 12 months. I have considered this in conjunction with Contact's comments and agree with the recommendation.

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	Metered volume missing from the November submission and the unmetered volume is missing from the January 2022 submission. The database contained missing daily kWh information for one set of traffic lights, resulting in minor under submission of an estimated 2,964 kWh per annum. The monthly database extract provided does not track changes at a daily basis and is provided as a snapshot.	Moderate	Low	2	Investigating
Location of each item of load	2.4	11(2)(b) of Schedule 15.3	One item of load does not have any equipment type associated to the site name, to indicate the vehicle lantern type and wattage.	Strong	Low	1	Identified
Audit trails	2.6	11(4) of Schedule 15.3	No audit trail of changes made in the access database.	Weak	Low	3	Investigating
Database accuracy	3.1	15.2 and 15.37B(b)	The database contained some incorrect daily kWh information, resulting in minor under submission of an estimated 2,964 kWh per annum.	Strong	Low	1	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)	Metered volume missing from the November submission and the unmetered volume is missing from the January 2022 submission. The database contained missing daily kWh information for one set of traffic lights, resulting in minor under submission of an estimated 2,964 kWh per annum. The monthly database extract provided does not track changes at a daily basis and is provided as a snapshot.	Moderate	Low	2	Investigating
					Future Risk Rating	**9**	

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
Incorrect submission volumes	2.1	Investigate the metered volumes that are missing from the November 2021 submission and the unmetered volume missing from the January 2022 submission.

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

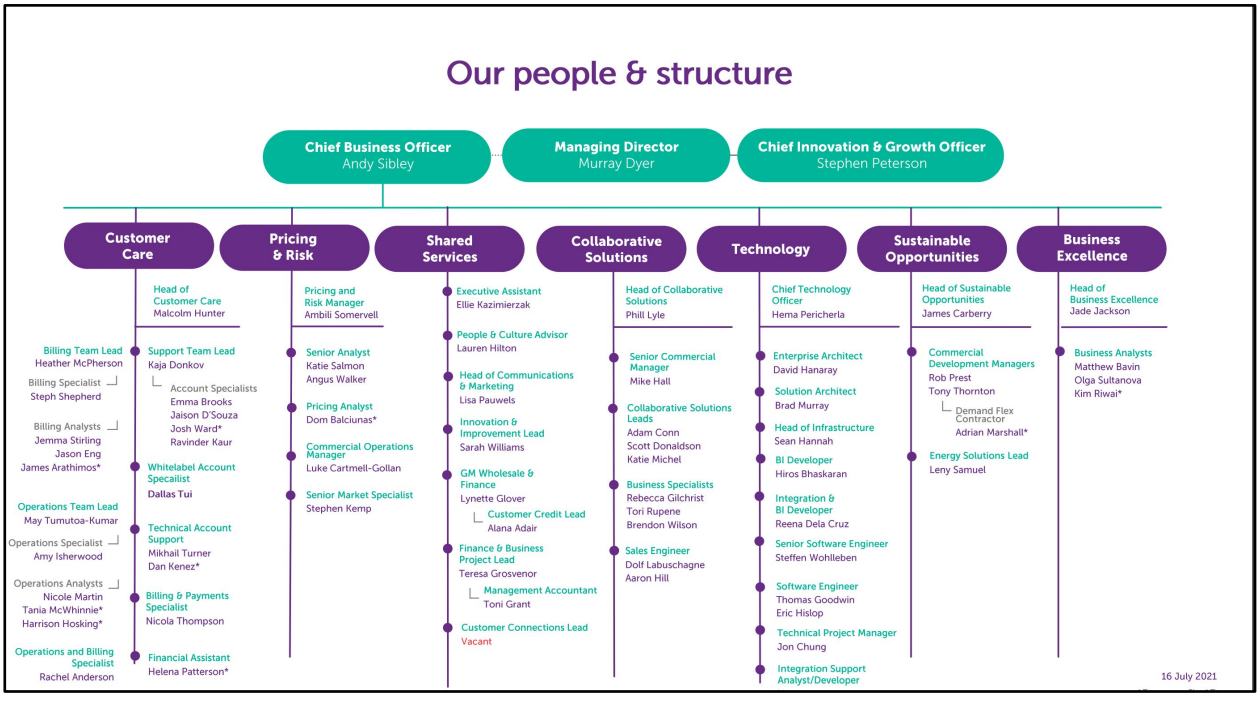
The Electricity Authority's website was reviewed to identify any exemptions relevant to the scope of this audit.

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
Bruce Kelly	SCATS Engineer	Christchurch Transport Operation Centre – Christchurch City Council
Luke Cartmell-Gollan	Commercial Operations Manager	Contact Energy

1.4. Hardware and Software

Traffic light data is maintained in RTOAD Access database by CTOC. Backup and restoration procedures are in accordance with normal industry protocols.

A copy of the traffic light asset information is also maintained within RAMM. RAMM is periodically reconciled for RTOAD to ensure that it holds all traffic light information.

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

The following ICPs are relevant to the scope of this audit. The database expresses the wattage as kWh per day.

ICP Number	Description	NSP	Profile	Number of sites	Database kWh per day
0007102602RN872	Ref Orion_Bromley 66kV GXP Traffic Lights	BRY0661	UML	69	410.41
0007102603RN437	Ref Orion_Islington 33kV GXP Traffic Lights	ISL0331	UML	17	131.44
0007102604RN9FD	Ref Orion_Islington 66kV GXP Traffic Lights	ISL0661	UML	311	2,106.69
0000298513MPF38	TRAFFIC LIGHTS OFF RAMP	KAI0111	RPS UML	5	5.98
			Total	**402**	**2,654.52**

1.7. Authorisation Received

All information was provided directly by Contact or the CTOC.

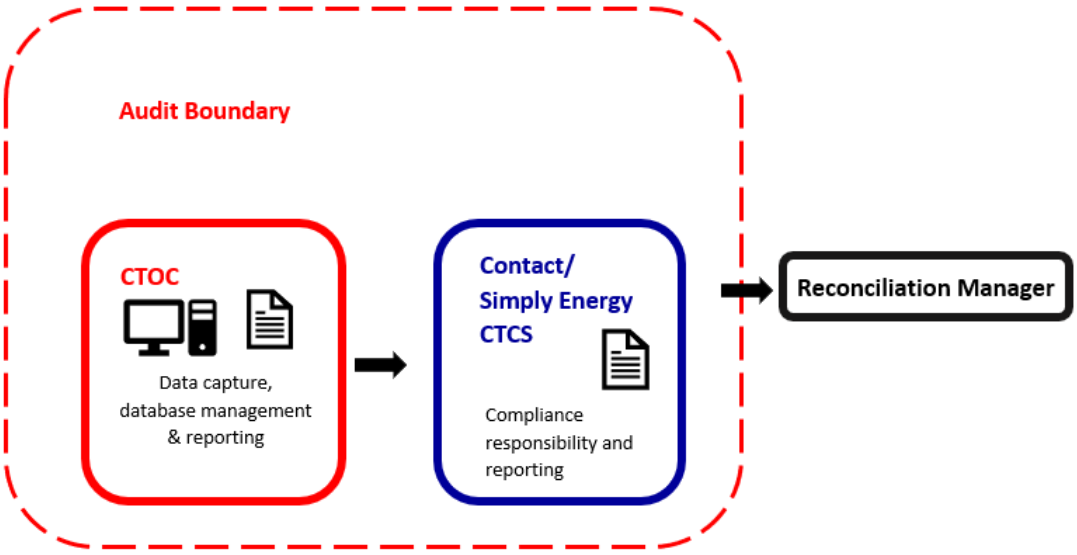
1.8. Scope of Audit

This audit of the CTOC 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.

Traffic light data is maintained in RTOAD (Real Time Operations Asset Database) database by CTOC. RTOAD records the quantity of each equipment type, including vehicle lanterns of various types and wattages, pedestrian lanterns of various types and wattages, illuminated signs, speed zone signs and traffic safety cameras at each intersection. The wattage for each item is multiplied by the estimated number of hours on per day, power level, and kW per hour to give a daily kWh value. The hours and power level are based on historic metering information, from when a sample of lights were metered to determine these values.

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 102 sites on 21 and 22 March 2022.

1.9. Summary of previous audit

Contact provided a copy of the last audit report undertaken by Rebecca Elliot of Veritek Limited, completed in April 2021. The table below records the findings.

Table of Non-compliance

Subject	Section	Clause	Non-compliance	Status
Deriving submission information	2.1	11(1) of Schedule 15.3	Estimated 444,770.64 kWh of under submission from October 2020 up to March 2021 since switching to the CTCS participant code. The database contained some incorrect daily kWh information, resulting in minor under submission of an estimated 285 kWh per annum.	Cleared Cleared
ICP identifier and items of load	2.2	11(2)(a) and (aa) of Schedule 15.3	ICP number is not recorded in RTOAD. All items of load have a GXP recorded, and this GXP information is used to map to the correct ICP.	Cleared
All load recorded in database	2.5	11(2A) of Schedule 15.3	Eleven traffic safety cameras were missing from the database.	Cleared
Audit trails	2.7	11(4) of Schedule 15.3	No audit trail of changes made in the access database.	Still existing

Subject	Section	Clause	Non-compliance	Status
Database accuracy	3.1	15.2 and 15.37B(b)	The database contained some incorrect daily kWh information, resulting in minor under submission of an estimated 285 kWh per annum. ICP number is not recorded in the database.	Cleared Cleared
Volume information accuracy	3.2	15.2 and 15.37B(c)	Estimated 444,770.64 kWh of under submission from October 2020 up to March 2021 since switching to the CTCS participant code. The database contained some incorrect daily kWh information, resulting in minor under submission of an estimated 285 kWh per annum.	Cleared 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 have requested Veritek to undertake this streetlight audit.

Audit commentary

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

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

Audit commentary

RTOAD records the quantity of each equipment type, including vehicle lanterns of various types and wattages, pedestrian lanterns of various types and wattages, illuminated signs, speed zone signs and traffic safety cameras at each intersection. The wattage for each item is multiplied by the estimated number of hours on per day, power level, and kW per hour to give a daily kWh value. The hours and power level are based on historic metering information, from when a sample of lights were metered to determine these values.

The load is submitted as NHH using the UML profile for ICPs 0007102602RN872, 007102603RN437 and 0007102604RN9FD. The profile for ICP 00000298513MPF38 was updated from RPS UML to RPS on 26 November 2021 as part of the MEP nomination. A meter was installed on 29 November 2021. I checked all submissions from November 2021 to February 2022 and found the volume of metered and unmetered appears to be incorrect:

ICP	Profile	Nov 21	Dec 21	Jan 22	Feb 22
0000298513MPF38	UML	179	169.84	0	149.24
	RPS	0	21.99	272.85	213.91
Total kWh per month		**179**	**191.83**	**272.85**	**363.15**

The metered volumes are missing from the November 2021 submission and the unmetered volume is missing from the January 2022 submission. I recommend this is investigated. The incorrect volumes and profile are recorded as non-compliance below.

I checked the submission for all ICPs for the month of February 2022 and confirmed that the volumes were correctly calculated.

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.

The field audit confirmed that the database accuracy fell within the allowable thresholds.

As detailed in **section 3.1**, analysis of the database found missing daily kWh information for one set of traffic lights, resulting in minor under submission of an estimated 2,964 kWh per annum.

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 data supplied to Contact each month is based on a snapshot and does not achieve compliance with the requirements above.

Recommendation	Description	Audited party comment	Remedial action
Clause 11(1) of Schedule 15.3	Investigate the metered volumes that are missing from the November 2021 submission and the unmetered volume missing from the January 2022 submission.	An investigation is currently underway to determine what this meter is supplying as it was not commissioned by either CCC or Simply Energy. Our suspicions are this is recording volume on assets that are already reconciled via our DUML processes. All historic volumes related to the meter will be corrected via usual revision submission process upon outcome of this investigation.	Investigating

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.1 With: Clause 11(1) of Schedule 15.3 From: 18-Mar-21 To: 7-Mar-22	Metered volume missing from the November submission and the unmetered volume is missing from the January 2022 submission. The database contained missing daily kWh information for one set of traffic lights, resulting in minor under submission of estimated 2,964 kWh per annum. The monthly database extract provided does not track changes at a daily basis and is provided as a snapshot. Potential impact: Low Actual impact: Low Audit history: Multiple times previously Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as moderate as the installation of metering on an unmetered site has resulted in the incorrect profile being applied and this wasn't identified prior to the audit. The impact is assessed to be low as the discrepancy found will only have a minor effect on submission.

Actions taken to resolve the issue	Completion date	Remedial action status
An investigation is currently underway to determine what this meter is supplying as it was not commissioned by either CCC or Simply Energy. Our suspicions are this is recording volume on assets that are already reconciled via our DUML processes. All historic volumes related to the meter will be corrected via usual revision submission process upon outcome of this investigation. Missing data has been added to the database; Capacity from September 2021 (instal date of light) have been updated to reflect this additional load and will be corrected in the next available revision.	31/5/2022 30/4/2022	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Investigations are ongoing at CCC in regards to moving away from an Access based database to manage assets. Improved controls and audit tracking will be integral to the new system. This will also necessitate the re-writing of the code that determines the daily consumption values, at which point we can address the ability to calculate a daily value, rather than a monthly snapshot.		

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

The database was checked to confirm an ICP was recorded against each item of load, this has been added since the previous audit.

Audit outcome

Compliant

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 have a site name recorded which includes the location. All items of load have GPS coordinates recorded, except for 44 school speed signs. The signs all have a school name and a street name recorded in the site name field, this ensures they are locatable. There can be between two and ten speed signs around a school at various locations, these are recorded as one site in RTOAD.

Audit outcome

Compliant

2.3. 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 contains load types and capacities.

Audit commentary

RTOAD records the quantity of each equipment type, including vehicle lanterns of various types and wattages, pedestrian lanterns of various types and wattages, illuminated signs, speed zone signs and traffic safety cameras at each intersection. The wattage for each item is multiplied by the estimated number of hours on per day, power level, and kW per hour to give a daily kWh value. The hours and power level are based on historic metering information, from when a sample of lights were metered to determine these values.

The capacity in watts is recorded in the database as part of the daily kWh calculation and is also set out in the CTOC Traffic Signal Database Traffic Signal Power Calculation Formula document.

All items of load have site units per day recorded, except one item of load that does not have any equipment type associated to the site name, that would indicate the vehicle lantern type and wattage. The wattage value is required to calculate the daily site units. The site only has the controller charge applied.

SiteName	NumPwrCons	ContType	IntUnitsPerDay
Elizabeth/Matipo	1	ATSC4v6	0.23

The accuracy of the recorded wattages is discussed 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: 18-Mar-21 To: 7-Mar-22	One item of load does not have any equipment type associated to the site name, to indicate the vehicle lantern type and wattage. 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 recorded as strong because they mitigate risk to an acceptable level. 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
Item description has been updated	31/3/2022	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

2.4. 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 102 sites on 21 and 22 March 2022.

Audit commentary

There were no differences identified during the field audit, the accuracy of the field sample was 100% correct and matched the database wattage.

Audit outcome

Compliant

2.5. 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

For new connections the Christchurch City Council (CCC) capital programme team manage the process and the CTOC are responsible for programming the lights and ensuring that both RTOAD and RAMM are updated. A RAMM data sheet is completed, and the information is populated in the RTOAD database and in RAMM. CTOC is usually aware of any new lights to be commissioned and ensures that database information is updated as required.

The ICP, GXP, and types and quantities of equipment installed are determined from the signal plan and "as built" information.

Additions, changes and decommissions are managed by CTOC, and the database is updated from the effective date of the change.

Audit outcome

Compliant

2.6. 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

CTOC RTOAD Access database has no audit trail of additions and changes to the database information.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.6 With: Clause 11(4) of Schedule 15.3 From: 18-Mar-21 To: 7-Mar-22	No audit trail of changes made in the access database. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Weak Breach risk rating: 3
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as weak because audit trails do not exist. The impact is rated as low, because it does not affect submission.

Actions taken to resolve the issue	Completion date	Remedial action status
		Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Investigations are ongoing at CCC in regards to moving away from an Access based database to manage assets. Improved controls and audit tracking will be integral to the new system.	2023	

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

Contacts' submissions are based on a monthly extract from the database. A database extract was provided in March 2022. A field audit was undertaken of 102 items of load.

The change management process and timeliness of database updates was evaluated.

Audit commentary

Field audit findings

A field audit was conducted of 102 items of load. I found that the accuracy of the field sample was 100% correct and matched the database wattage, compliance is recorded.

Change management process findings

For new connections the Christchurch City Council (CCC) capital programme team manage the process and the CTOC are responsible for programming the lights and ensuring that both RTOAD and RAMM are updated. A RAMM data sheet is completed, and the information is populated in the RTOAD database and in RAMM. CTOC is usually aware of any new lights to be commissioned and ensures that database information is updated as required.

Wattage accuracy

The accuracy of the wattages recorded in the database was confirmed by reperforming the wattage calculation for each type of equipment and summing the result by site. The recalculation was according to the CTOC Traffic Signal Database Traffic Signal Power Calculation Formula document.

As discussed in **section 2.4**, one item of load does not have site units per day recorded. This will be resulting in a minor under submission of 2,694 kWh per annum, this is recorded as a non-compliance below.

The capacity in watts is recorded in the database as part of the daily kWh calculation and is also set out in the CTOC Traffic Signal Database Traffic Signal Power Calculation Formula document.

Address location accuracy

As discussed in **section 2.3**, all lights have an address recorded.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.1 With: Clause 15.2 and 15.37B(b) From: 18-Mar-21 To: 7-Mar-22	The database contained some missing daily kWh information, resulting in minor under submission of an estimated 2,964 kWh per annum. Potential impact: Low Actual impact: Low Audit history: Twice previously Controls: Strong Breach risk rating:1
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as strong because they mitigate risk to an acceptable level. The impact is assessed to be low as the discrepancy found will only have a very minor effect on submission.

Actions taken to resolve the issue	Completion date	Remedial action status
Missing data has been added to the database; Capacity from September 2021 (install date of light) have been updated to reflect this additional load and will be corrected in the next available revision.	30/4/2021	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

3.2. Volume information accuracy (Clause 15.2 and 15.37B(c))

Code reference

Clause 15.2 and 15.37B(c)

Code related audit information

The audit must verify that:

- *volume information for the DUML is being calculated accurately*
- *profiles for DUML have been correctly applied.*

Audit observation

The submission was checked for accuracy for the month the database extract was supplied. This included:

- checking the registry to confirm that the ICP has the correct profile and submission flag, and
- checking the database extract combined with the burn hours against the submitted figure to confirm accuracy.

Audit commentary

RTOAD records the quantity of each equipment type, including vehicle lanterns of various types and wattages, pedestrian lanterns of various types and wattages, illuminated signs, speed zone signs and traffic safety cameras at each intersection. The wattage for each item is multiplied by the estimated number of hours on per day, power level, and kW per hour to give a daily kWh value. The hours and power level are based on historic metering information, from when a sample of lights were metered to determine these values.

The load is submitted as NHH using the UML profile for ICPs 0007102602RN872, 007102603RN437 and 0007102604RN9FD. The profile for ICP 00000298513MPF38 was updated from RPS UML to RPS on 26 November 2021 as part of the MEP nomination. A meter was installed on 29 November 2021. I checked all submissions from November 2021 to February 2022 and found the volume of metered and unmetered appears to be incorrect:

ICP	Profile	Nov 21	Dec 21	Jan 22	Feb 22
0000298513MPF38	UML	179	169.84	0	149.24
	RPS	0	21.99	272.85	213.91
Total kWh per month		**179**	**191.83**	**272.85**	**363.15**

The metered volumes are missing from the November 2021 submission and the unmetered volume is missing from the January 2022 submission. A recommendation to investigate this is detailed in **section 2.1**. The incorrect volumes and profile are recorded as non-compliance below.

I checked the submission for all ICPs for the month of February 2022 and confirmed that the volumes were correctly calculated.

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.

The field audit confirmed that the database accuracy fell within the allowable thresholds.

As detailed in **section 3.1**, analysis of the database found missing daily kWh information for one set of traffic lights, resulting in minor under submission of an estimated 2,964 kWh per annum.

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 data supplied to Contact each month is based on a snapshot and does not achieve compliance with the requirements above.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.2 With: Clause 15.2 and 15.37B(c) From: 18-Mar-21 To: 7-Mar-22	Metered volume missing from the November submission and the unmetered volume is missing from the January 2022 submission. The database contained missing daily kWh information for one set of traffic lights, resulting in minor under submission of an estimated 2,964 kWh per annum. The monthly database extract provided does not track changes at a daily basis and is provided as a snapshot. Potential impact: Low Actual impact: Low Audit history: Multiple times previously Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as moderate as the installation of metering on an unmetered site has resulted in the incorrect profile being applied and this wasn't identified prior to the audit. The impact is assessed to be low as the discrepancy found will only have a very minor effect on submission.

Actions taken to resolve the issue	Completion date	Actions taken to resolve the issue
An investigation is currently underway to determine what this meter is supplying as it was not commissioned by either CCC or Simply Energy. Our suspicions are this is recording volume on assets that are already reconciled via our DUML processes. All historic volumes related to the meter will be corrected via usual revision submission process upon outcome of this investigation. Missing data has been added to the database; Capacity from September 2021 (instal date of light) have been updated to reflect this additional load and will be corrected in the next available revision.	31/5/2022 30/4/2022	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Investigations are ongoing at CCC in regards to moving away from an Access based database to manage assets. Improved controls and audit tracking will be integral to the new system. This will also necessitate the re-writing of the code that determines the daily consumption values, at which point we can address the ability to calculate a daily value, rather than a monthly snapshot.		

CONCLUSION

Traffic light data is maintained in RTOAD (Real Time Operations Asset Database) by CTOC. RTOAD records the quantity of each equipment type, including vehicle lanterns of various types and wattages, pedestrian lanterns of various types and wattages, illuminated signs, speed zone signs and traffic safety cameras at each intersection. The wattage for each item is multiplied by the estimated number of hours on per day, power level, and kW per hour to give a daily kWh value. The hours and power level are based on historic metering information, from when a sample of lights were metered to determine these values.

The load is submitted as NHH using the UML profile for ICPs 0007102602RN872, 007102603RN437 and 0007102604RN9FD. The profile for ICP 00000298513MPF38 was updated from RPS UML to RPS on 26 November 2021 as part of the MEP nomination. A meter was installed on 29 November 2021. I checked all submissions from November 2021 to February 2022 and found the volume of metered and unmetered appears to be incorrect:

ICP	Profile	Nov 21	Dec 21	Jan 22	Feb 22
0000298513MPF38	UML	179	169.84	0	149.24
	RPS	0	21.99	272.85	213.91
Total kWh per month		**179**	**191.83**	**272.85**	**363.15**

The metered volumes are missing from the November 2021 submission and the unmetered volume is missing from the January 2022 submission.

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.

The field audit confirmed that the database accuracy fell within the allowable thresholds.

Five non-compliances were identified, and this audit makes one recommendation. The future risk rating of nine indicates that the next audit be completed in 12 months. I have considered this in conjunction with Contact's comments and agree with the recommendation.

PARTICIPANT RESPONSE

Contact Energy have reviewed this report and their comments are recorded in the body of the report. No further comments were provided.