ELECTRICITY INDUSTRY PARTICIPATION CODE
DISTRIBUTED UNMETERED LOAD AUDIT REPORT

For

INVERCARGILL CITY COUNCIL AND TRUSTPOWER LIMITED

Prepared by: Tara Gannon

Date audit commenced: 19 March 2018

Date audit report completed: 19 April 2018

Audit report due date: 1 June 2018

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EXECUTIVE SUMMARY

This audit of the Invercargill City Council (ICC) DUML database and processes was conducted at the request of Trustpower Limited (Trustpower) 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, which became effective on 1 June 2017.

The database used for submission is managed by PowerNet. PowerNet provide a monthly report to Trustpower of this database. PowerNet are not the maintenance contractors for the ICC lights.

ICC also maintain their own RAMM database which includes streetlight information. ICC is in the process of validating and updating this database. Once they are satisfied it is accurate, this database will be used to provide monthly reports to Trustpower to be used for billing and submission.

The future risk rating of 29 indicates that the next audit be completed in three months, and I recommend the next audit should be scheduled after Trustpower begins using the ICC database for submission. Six non-compliances were identified, and no recommendations were raised. 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 database contains some incorrect and missing information. The field data was 115.1% of the database data for the sample checked, indicating an estimated under submission of 18,856 kWh per annum.	Weak	Medium	6	Identified
Location of each item of load	2.3	11(2)(b) of Schedule 15.3	30 items of load do not have a street address recorded, and one item of load does not have sufficient address information recorded. Two streets had incorrect address information recorded.	Moderate	Low	2	Identified
All load recorded in database	2.5	11(2A) of Schedule 15.3	The field audit identified 36 lamps which were not recorded in the database.	Weak	Low	3	Identified
Tracking of load changes	2.6	11(3) of schedule 15.3	The tracking of load changes is not being carried out in relation to changing of light type on existing items of load.	Weak	Medium	6	Identified
Database accuracy	3.1	15.2 and 15.37B(b)	The database contains some incorrect and missing information. The field data was 115.1% of the database data for the sample checked, indicating an estimated under submission of 18,856 kWh per annum.	Weak	Medium	6	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Deriving submission information	3.2	15.2 and 15.37B(c)	The database contains some incorrect and missing information. The field data was 115.1% of the database data for the sample checked, indicating an estimated under submission of 18,856 kWh per annum.	Weak	Medium	6	Identified
Future Risk Rating						29	

Future risk rating	1-3	4-6	7-8	9-17	18-26	27+
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

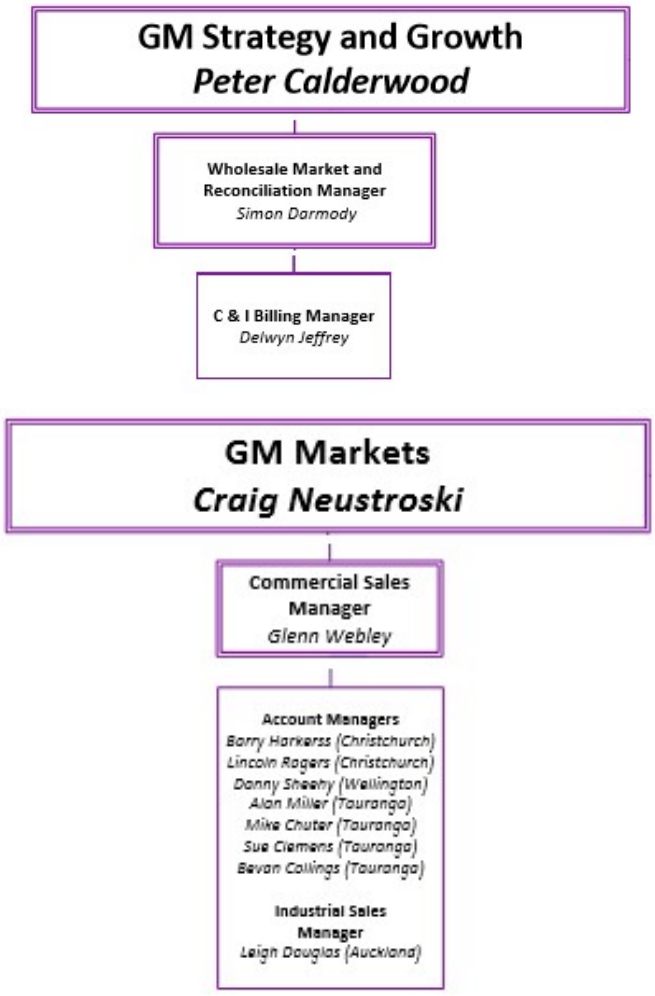
The Electricity Authority's website was reviewed to identify any exemptions relevant to the scope of this audit.

Audit commentary

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

1.2. Structure of Organisation

Trustpower provided a copy of their organisational structure.



1.3. Persons involved in this audit

Auditor:

Tara Gannon

Veritek Limited

Electricity Authority Approved Auditor

Other personnel assisting in this audit were:

Name	Title	Company
Delwyn Jeffrey	Commercial and Industrial Billing Manager	Trustpower
Barry Harkerss	Commercial Account Manager	Trustpower
Alaister Marshall	Customer and Metering Services Manager	PowerNet
Rebecca Elliot	Director	Veritek Limited

1.4. Hardware and Software

The SQL database used for the management of DUML is managed by PowerNet.

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

1.5. Breaches or Breach Allegations

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

1.6. ICP Data

ICP Number	Description	NSP	Number of items of load	Database wattage (watts)
0008803002NV4BD	ICC LIGHTS – EIL INVERCARGILL	INV0331	4,393	592,610
0008803012NVE10	ICC LIGHTS - BLUFF	INV0331	390	32,784
0008801003TPFE8	ICC LIGHTS - TPC URBAN	INV0331	1,011	117,964
0008801013TP545	ICC LIGHTS - TPC RURAL	INV0331	177	39,241

ICP Number	Description	NSP	Number of items of load	Database wattage (watts)
Total			**5,971**	**782,599**

1.7. Authorisation Received

All information was provided directly by Trustpower and PowerNet.

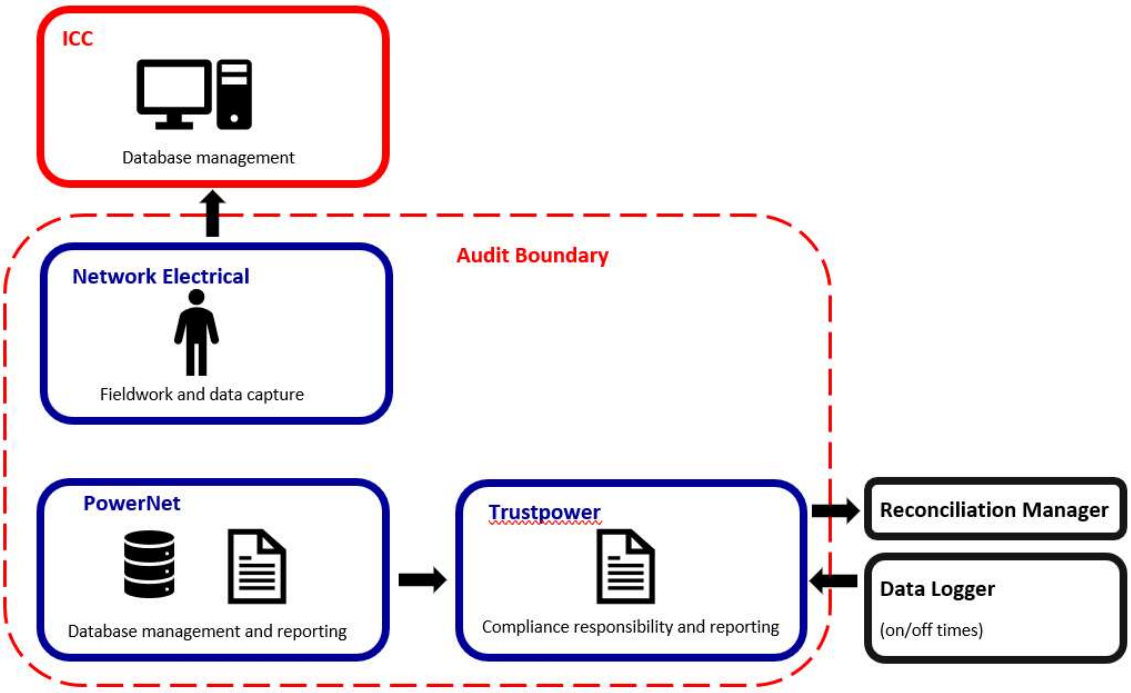
1.8. Scope of Audit

The database used for submission is managed by PowerNet. PowerNet provide a monthly report to Trustpower of this database. PowerNet are not the maintenance contractors for the ICC lights.

ICC also maintain their own RAMM database which includes streetlight information. ICC is in the process of validating and updating this database. Once they are satisfied it is accurate, this database will be used to provide monthly reports to Trustpower to be used for billing and submission.

ICC's contractor for streetlight installation and maintenance is Network Electrical.

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

The field audit was undertaken of 308 items of load on 19-22 March 2018. The total population was divided into four strata:

- EIL – Bluff
- EIL – Invercargill
- TPC – Rural; and

- TPC – Urban.

1.9. Summary of previous audit

The previous audit was completed in September 2013 by Steve Woods of Veritek Limited. Two non-compliances were identified, and three recommendations were made. The statuses of the non-compliances and recommendations are described below.

Subject	Section	Clause	Non-compliance	Status
Location of each item of load	2.2.2	11(2)(b) of schedule 15.3	Location of each item of load not recorded.	Still existing. Refer to **section 2.3**.
Tracking of load changes	2.3	11(3) of schedule 15.3	Xmas lighting not included in submission total. Database is not accurate.	Still existing. Refer to **section 2.5**.

Subject	Section	Clause	Recommendation	Status
Data transmission	1.9	20 of schedule 15.2	Introduce password security to the monthly file.	Not applicable, no longer reviewed as part of the audit.
Capacity of items of load	2.2.4	11(2)(d) of Schedule 15.3	Adopt standard wattages.	Cleared, wattages are correctly recorded. Refer to **section 2.4**.
Tracking of load changes	2.3	11(3) of schedule 15.3	Check whether ICC has a street light database that is more accurate. Consider reverting back to using metered consumption information.	Trustpower intends to use the ICC database once its accuracy is confirmed.

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

Trustpower 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. Compliance is confirmed.

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

Trustpower reconciles this DUML load using the STL profile. The on and off times are derived from data logger information.

I recalculated the submissions for February 2018 for ICPs 0008803002NV4BD, 0008801013TP545, 0008801003TPFE8 and 0008803012NVE10 using the data logger and database information. I confirmed that the calculation method was correct.

Because updated February 2018 database information was received after initial submissions were due, the initial allocation submission was based on January 2018 database information. I verified that once February 2018 data was received the system was updated, and the correct data was provided for revision 1.

There is some inaccurate data within the PowerNet database used to calculate submissions. This is recorded as non-compliance and discussed in **sections 2.5** and **3.1**.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.1 With: Clause 11(1) of Schedule 15.3 From: unknown To: 22-Mar-18	The database contains some incorrect and missing information. The field data was 115.1% of the database data for the sample checked, indicating an estimated under submission of 18,856 kWh per annum. Potential impact: Medium Actual impact: Low Audit history: None Controls: Weak Breach risk rating: 6

Audit risk rating	Rationale for audit risk rating
Medium	Controls are rated as weak, because the database submissions are based on some inaccurate and missing information. The impact is assessed to be medium. • The difference between the initial and one month submissions for February 2018 for the four ICPs is approximately 28,325 kWh and has been washed up. • I found that the database had under recorded the load by an estimated 4.415 kW for the sample checked during the field audit, which could result in under reporting of an estimated 18,856 kWh per annum. If the whole database has a similar level of accuracy to the sample, the impact is expected to be medium.

Actions taken to resolve the issue	Completion date	Remedial action status
TRUS will no longer use the PNET database, instead we will use the RAMM database maintained by ICC from 01/05/18.	01/05/18	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
TRUS will no longer use the PNET database, instead we will use the RAMM database maintained by ICC from 01/05/18	01/05/18	

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 PowerNet 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.

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

Audit commentary

Most items of load have a location street, location town, and pole number recorded.

There is insufficient address information to enable the location to be readily identified for 30 records:

- Two items of load connected to 0008803002NV4BD do not have a location street recorded.
- 28 items of load connected to 0008801003TPFE8 do not have a location street recorded, and one has a location street of 06 recorded.

Two streets had incorrect address information:

- Lights on Hinton Court were recorded against Checketts Court.
- Lights recorded on Takatinu Crescent were on Hoffman Court. It appears that Takatinu Crescent was a proposed name for this street.

This is recorded as non-compliance below.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.3 With: Clause 11(2)(b) of Schedule 15.3 From: unknown To: 22-Mar-18	30 items of load do not have a street address recorded, and one item of load does not have sufficient address information recorded. Two streets had incorrect address information recorded. Potential impact: Low Actual impact: Low Audit history: Once previously Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as moderate as they are sufficient to ensure that most items of load have address information recorded. The impact is rated as low because 31 ICPs (0.5%) have insufficient address information.

Actions taken to resolve the issue	Completion date	Remedial action status
TRUS will no longer use the PNET database, instead we will use the RAMM database maintained by ICC from 01/05/18	01/05/18	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
TRUS will no longer use the PNET database, instead we will use the RAMM database maintained by ICC from 01/05/18	01/05/18	

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 PowerNet database was checked to confirm that it contained a field for lamp type and wattage capacity and included any ballast or gear wattage.

Audit commentary

A lamp type, lamp rating, and input wattage (including gear or ballast) is included for each item of load.

Audit outcome

Compliant

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

Code reference

Clause 11(2A) of Schedule 15.3

Code related audit information

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

Audit observation

A field audit of a statistical sample of 308 items of load recorded in the PowerNet database was undertaken. The total population was divided into four strata:

- EIL – Bluff
- EIL – Invercargill
- TPC – Rural; and
- TPC – Urban.

Audit commentary

The field audit findings are detailed in the table below.

Wattages for lamps found in the street but not the database were based on lamp label information where available and estimated based on physical characteristics and other surrounding lamps where unlabelled.

Address	Database Count	Field Count	Count differences	Wattage differences	Comments
EIL Bluff					
Henderson	9	7	-2	-	In database but not found in the street: ➢ One 20W fluoro and one 90W LPS
Slaney	14	13	-1	7	In database but not street: ➢ Eight 20W fluoro In street but not database: ➢ Seven 70W
EIL Invercargill					
Airport Ave	26	38	12	24	All lamps located on Airport Avenue were counted, and lamps situated in the airport carpark were excluded. In database but not street: ➢ 24 60W fluoro In street but not database: ➢ 16 150W ➢ One 250W ➢ Nine Cree LED 30 ➢ Ten unidentified LEDs
Alice	8	7	-1	1	In database but not street: ➢ Six 60W fluoro In street but not database: ➢ Five 70W sodium
Anglem	10	10	0	2	In database but not street: ➢ Two 60W fluoro In street but not database: ➢ Two 70W sodium
Annan	9	9	0	5	In database but not street: ➢ Three 60W fluoro ➢ Two 250W mercury vapour In street but not database: ➢ Five 70W sodium
Bowmont	21	27	6	16	In database but not street: ➢ 16 60W fluoro In street but not database: ➢ 22 70W sodium
Clifton	8	8	-	-	
Compton	4	4	-	-	
Eden	12	13	1	-	In street but not database: ➢ One 60W fluoro
Falcon	2	2	-	-	
Glenalmond	7	9	2	-	In street but not database: ➢ Two 60W fluoro
Jenkin	12	12	-	-	
Landsdowne	3	3	-	-	

Address	Database Count	Field Count	Count differences	Wattage differences	Comments
Lauder	9	11	2	9	In database but not street: ➢ Nine 60W fluoro In street but not database: ➢ 11 70W sodium
Lees	9	11	2	4	In database but not street: ➢ Four 60W fluoro In street but not database: ➢ Six 70W sodium
Liffey	10	10	-	-	
Margaret	12	18	6	12	In database but not street: ➢ 12 60W fluoro In street but not database: ➢ 18 70W sodium
Mitchell	7	7	-	7	In database but not street: ➢ Seven 60W fluoro In street but not database: ➢ Seven LED 22
Princes	30	30	-	14	In database but not street: ➢ 14 60W fluoro In street but not database: ➢ 14 70W sodium
Purdue	6	6	-	-	
Tyne	14	14	-	10	In database but not street: ➢ Ten 60W fluoro In street but not database: ➢ Ten 100W sodium
Wye	6	6	-	-	
TPC Urban					
Checketts	5	5	-	-	Includes lights on Hinton Court which are not separately listed in the database.
Gimblet	13	13	-	3	In database but not street: ➢ Three 70W sodium In street but not database: ➢ Three 60W fluoro
Severn	6	9	3	3	In database but not street: ➢ Three 40W fluoro In street but not database: ➢ Six 70W sodium
Takatinu	7	13	6	-	Named Hoffman Court, not Takatinu Crescent. In street but not database: ➢ Six 70W sodium
TPC Rural					
SH1/Clapham Rd Intersection, Kennington	4	4	-	-	

Address	Database Count	Field Count	Count differences	Wattage differences	Comments
SH6/Flora Road Intersection, Makarewa	5	5	-	-	
TPC Rural and Urban					
Dunns, Otarata	20	20	-	1	In database but not street: ➢ One 80W mercury vapour In street but not database: ➢ One LED 23.
Total	**308**	**344**	**36**	**118**	

I found 36 more lamps in the field than were recorded in the database. This is recorded as non-compliance below. The 118 lamp wattage differences are recorded as non-compliance in **section 3.1**.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.5 With: Clause 11(2A) of Schedule 15.3 From: unknown To: 22-Mar-18	The field audit identified 36 lamps which were not recorded in the database. Potential impact: Low Actual impact: Low Audit history: Once previously Controls: Weak Breach risk rating: 3
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as weak, as they are not sufficient to ensure that most database information is recorded correctly. The impact is rated as low, 89.5% of lamps found were recorded in the database. Most of the wattage difference related to wattage discrepancies, rather than lamp count differences.

Actions taken to resolve the issue	Completion date	Remedial action status
TRUS will no longer use the PNET database, instead we will use the RAMM database maintained by ICC from 01/05/18	01/05/18	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
TRUS will no longer use the PNET database, instead we will use the RAMM database maintained by ICC from 01/05/18	01/05/18	

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 PowerNet database was examined.

Audit commentary

Any changes that are made during any given month take effect from the beginning of that month. The information is available which would allow for the total load in kW to be retrospectively derived for any day. On 20 September 2012, the Authority sent a memo to retailers and auditors advising that tracking of load changes at a daily level was not required if the database contained an audit trail. I have interpreted this to mean that the provision of a copy of the report to Trustpower when changes occur is sufficient to achieve compliance.

The processes were reviewed for new lamp connections and the tracking of load changes due to faults and maintenance. Fault, maintenance and LED upgrade work is completed by Network Electrical. PowerNet have advised ICC that they are no longer updating their database in relation to the maintenance of lamps. If items of load are removed these will be updated but not if lamp type is changed. Therefore, the tracking load changes is no longer being carried out for all changes. This is recorded as non-compliance below.

All new lamp installations or changes of wattage require an application for service form to be completed and provided to PowerNet. New subdivisions require a proposed plan to be provided and an "as built" plan once the development is complete.

Outage patrols are conducted by ICC, however lamp wattage in the database are not checked as part of this process.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.6 With: Clause 11(3) of schedule 15.3 From: entire audit period	The tracking of load changes is not being carried out in relation to changing of light type on existing items of load. Potential impact: High Actual impact: Medium Audit history: None Controls: Weak Breach risk rating: 6

Audit risk rating	Rationale for audit risk rating
Medium	The controls are rated as weak, because changes to light type are not being captured for exiting items of load. The impact is assessed to be medium. I found that the database had under recorded the load by an estimated 4.415 kW for the sample checked during the field audit, which could result in under reporting of an estimated 18,856 kWh per annum. If the whole database has a similar level of accuracy to the sample, the impact is expected to be medium.

Actions taken to resolve the issue	Completion date	Remedial action status
TRUS will no longer use the PNET database, instead we will use the RAMM database maintained by ICC from 01/05/18	01/05/18	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
TRUS will no longer use the PNET database, instead we will use the RAMM database maintained by ICC from 01/05/18	01/05/18	

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

PowerNet demonstrated a complete audit trail of all additions and changes to the database information.

Audit outcome

Compliant

3. ACCURACY OF DUML DATABASE

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

Code reference

Clause 15.2 and 15.37B(b)

Code related audit information

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

Audit observation

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	ICC region
Strata	The database contains items of load in Invercargill area. The area has two distinct sub regions of urban and rural. The processes for the management of all ICC items of load are the same, but I decided to place the items of load into four strata, as follows: 1. EIL – Bluff 2. EIL – Invercargill 3. TPC – Rural; and 4. TPC – Urban.
Area units	I created a pivot table of the roads in each area and I used a random number generator in a spreadsheet to select a total of 30 sub-units.
Total items of load	308 items of load were checked.

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

Audit commentary

The PowerNet database was found to contain some inaccuracies and missing data.

The field audit found:

- 36 more lamps in the field than were recorded in the database.
- 118 lamp wattage differences.

The field data was 115.1% of the database data for the sample checked. The total wattage recorded in the database for the sample was 29,186 watts. The estimated total wattage found in the field for the sample checked was 33,601 watts, a difference of 4,415 watts. This will result in estimated under submission of 18,856 kWh per annum (based on annual burn hours of 4,271 as detailed in the DUML database auditing tool).

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

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.1 With: Clause 15.2 and 15.37B(b) From: unknown To: 22-Mar-18	The database contains some incorrect and missing information. The field data was 115.1% of the database data for the sample checked, indicating an estimated under submission of 18,856 kWh per annum. Potential impact: Medium Actual impact: Low Audit history: None Controls: Weak Breach risk rating: 6
Audit risk rating	**Rationale for audit risk rating**
Medium	The controls are rated as weak, because they are not sufficient to ensure that lamp details are correct. The impact is assessed to be medium. I found that the database had under recorded the load by an estimated 4.415 kW for the sample checked during the field audit, which could result in under reporting of an estimated 18,856 kWh per annum. If the whole database has a similar level of accuracy to the sample, the impact is expected to be medium.

Actions taken to resolve the issue	Completion date	Remedial action status
TRUS will no longer use the PNET database, instead we will use the RAMM database maintained by ICC from 01/05/18	01/05/18	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
TRUS will no longer use the PNET database, instead we will use the RAMM database maintained by ICC from 01/05/18	01/05/18	

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
- checking the database extract combined with the burn hours against the submitted figure to confirm accuracy.

Audit commentary

Trustpower reconciles this DUML load using the STL profile. The on and off times are derived from data logger information.

I recalculated the submissions for February 2018 for ICPs 0008803002NV4BD, 0008801013TP545, 0008801003TPFE8 and 0008803012NVE10 using the data logger and database information. I confirmed that the calculation method was correct.

Because updated February 2018 database information was not received before initial submissions were due, the initial allocation submission was based on January 2018 database information. I verified that once February 2018 data was received the system was updated, and the correct data has been provided for revision 1.

There is some inaccurate data within the PowerNet database used to calculate submissions. This is recorded as non-compliance and discussed in **sections 2.5** and **3.1**.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.2 With: Clause 15.2 and 15.37B(c) From: unknown To: 22-Mar-18	The database contains some incorrect and missing information. The field data was 115.1% of the database data for the sample checked, indicating an estimated under submission of 18,856 kWh per annum. Potential impact: Medium Actual impact: Low Audit history: None Controls: Weak Breach risk rating: 6

Audit risk rating	Rationale for audit risk rating
Medium	Controls are rated as weak, because the database submissions are based on contains some inaccurate and missing information. The impact is assessed to be medium. • The difference between the initial and one month submissions for February 2018 for the four ICPs is approximately 28,325 kWh and has been washed up. • I found that the database had under recorded the load by an estimated 4.415 kW for the sample checked during the field audit, which could result in under reporting of an estimated 18,856 kWh per annum. If the whole database has a similar level of accuracy to the sample, the impact is expected to be medium.

Actions taken to resolve the issue	Completion date	Remedial action status
TRUS will no longer use the PNET database, instead we will use the RAMM database maintained by ICC from 01/05/18	01/05/18	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
TRUS will no longer use the PNET database, instead we will use the RAMM database maintained by ICC from 01/05/18	01/05/18	

CONCLUSION

The database used for submission is managed by PowerNet.

ICC also maintain their own RAMM database which includes streetlight information. ICC is in the process of validating and updating this database. Once they are satisfied it is accurate, this database will be used to provide monthly reports to Trustpower and used for billing and submission.

The future risk rating of 29 indicates that the next audit be completed in three months, and I recommend the next audit should be scheduled after Trustpower begins using the ICC database for submission. Six non-compliances were identified, and no recommendations were raised.

PARTICIPANT RESPONSE

Trustpower gained this customer and associated DUML database in 2017 and have spent time since then reviewing the issues from previous audit and identifying the best way forward, Trustpower will be using the ICC RAMM from 01/05/18 as it is expected to be a more accurate and maintained database. In order to fully implement these changes and bed in the new process we would recommend an audit period of 6 months.