

**ELECTRICITY INDUSTRY PARTICIPATION CODE
DISTRIBUTED UNMETERED LOAD AUDIT REPORT**

For

WAIPORI FALLS/PIONEER ENERGY

Prepared by: Ewa Glowacka

Date audit commenced: 27 March 2018

Date audit report completed: 31 May 2018

Audit report due date: 01-Jun-18

TABLE OF CONTENTS

Executive summary	3
Audit summary	4
Non-compliances	4
Recommendations	4
Issues 4	
1. Administrative	5
1.1. Exemptions from Obligations to comply with Code	5
1.2. Structure of Organisation	5
1.3. Persons involved in this audit	5
1.4. Hardware and Software	6
1.5. Breaches or Breach Allegations	6
1.6. ICP Data	6
1.7. Authorisation Received	6
1.8. Scope of Audit	6
1.9. Summary of previous audit	6
1.10. Distributed unmetered load audits (Clause 16A.26 and 17.295F)	6
2. DUML database requirements	8
2.1. Deriving submission information (Clause 11(1) of Schedule 15.3)	8
2.2. ICP identifier and items of load (Clause 11(2)(a) and (aa) of Schedule 15.3)	9
2.3. Location of each item of load (Clause 11(2)(b) of Schedule 15.3)	9
2.4. Description and capacity of load (Clause 11(2)(c) and (d) of Schedule 15.3)	10
2.5. All load recorded in database (Clause 11(2A) of Schedule 15.3)	10
2.6. Tracking of load changes (Clause 11(3) of Schedule 15.3)	10
2.7. Audit trail (Clause 11(4) of Schedule 15.3)	11
3. Accuracy of DUML database	12
3.1. Database accuracy (Clause 15.2 and 15.37B(b))	12
3.2. Volume information accuracy (Clause 15.2 and 15.37B(c))	12
Conclusion	14
Participant response	14

EXECUTIVE SUMMARY

This distributed unmetered load (DUML) audit was performed at the request of Pioneer Energy (PION) in accordance with clauses 11 of Schedule 15.3 and 15.37B of The Code 2010. The relevant clauses audited are as required by the Distributed unmetered load audit audits guidelines V 1.1 issued by the Electricity Authority.

Prior to the audit, Pioneer Energy submission volumes for Waipori Falls (embedded network owned by Trustpower) was based on information given by Aurora. The information was not supported by any database or spreadsheet. The information provided by Aurora were based information data passed to them by Trustpower in 2009. At the time Trustpower also provided a map, which indicates a location of lights. It is not GPS's the map, it is more like a sketch. 10 lights are installed in the area.

After physical audit of all lights, Pioneer Energy created a spreadsheet which meets compliance of the Code.

The audit found 2 non-compliances and one recommendation. Non-compliances relate to accuracy of volume information because incorrect value of the total load is used for calculation. The value is too high by 3W, which in this case is really negligible.

The date of the next audit is determined by the Electricity Authority and is dependent on the level of compliance during this audit. Table 1 of the Guidelines for Reconciliation Participant audit provides some guidance on this matter. The Future Risk Rating score is 2 which results in an indicative audit frequency of 24 months. We agree with the result.

We thank Pioneer Energy's staff for their full and complete cooperation in this audit. Their response to any request for information or clarification was answered in a timely manner and each time in depth, supporting evidence was provided.

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	Incorrect value of the S/L load is used for reconciliation	Strong	Low	1	Identified
Volume information accuracy	3.2	15.2	Incorrect value of the S/L load is used for reconciliation	Strong	Low	1	Identified
Future Risk Rating						2	

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

RECOMMENDATIONS

Subject	Section	Description	Recommendation
Tracking of load changes	2.6	Lack of a communication channel to be informed if any changes to the light occurs	Come in an agreement with Clutha District Council to be notified of any changes to the lights.

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

Pioneer Energy does not have any exemptions granted to exempt them from compliance with all or any of the clauses.

Audit commentary

Pioneer Energy did not apply for any exemptions. We checked the Electricity Authority website and confirm that there are no exemptions in place.

1.2. Structure of Organisation



1.3. Persons involved in this audit

Name	Title	Company
Jamie Aitken	Finance Manager	Pioneer Energy
Ewa Glowacka	Electricity Authority Approved Auditor	TEG & Associates

1.4. Hardware and Software

Pioneer Energy uses a spreadsheet to keep information for Waipori Falls streetlights.

1.5. Breaches or Breach Allegations

No breach or breach allegation were noted in relation to the scope of this audit.

1.6. ICP Data

ICP Number	Description	NSP	Number of items of load	Database wattage (watts)
0000207893DE37B	Waipori Falls village	WPV0061	10	830

1.7. Authorisation Received

Pioneer Energy provided a letter of authorisation to Ewa Glowacka of TEG & Associates permitting the collection of data from other parties for matters directly related to the audit.

1.8. Scope of Audit

This reconciliation participant audit was performed at the request of Pioneer Energy to encompass the Authority's request in accordance with clauses 11 of Schedule 15.3 and 15.37B of The Code 2010 to assure compliance with the Electricity Industry Participation Code 2010.

The physical audit was carried out in Waipori Falls, on the 27 March 2018.

The scope of audit was to assess if the database contains at a minimum the following information:

- (a) each ICP identifier for which the retailer is responsible, and to which distributed unmetered load is electrically connected; and
- (aa) the item or items of distributed unmetered load associated with each ICP identifier; and
- (b) the location of each item; and
- (c) a description of load type for each item, including any assumptions made in the assessment of its capacity; and
- (d) the capacity of each item in watts.

1.9. Summary of previous audit

It is an initial audit of these streetlights for Pioneer Energy. The company gained this ICP on 01/04/2017.

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 3 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

The physical audit was conducted in March 2018 as a part of Pioneer Energy reconciliation participant audit.

Audit commentary

The audit report was finalised before 1 June 2018.

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

Prior to the audit, Pioneer Energy submission volumes for Waipori Falls (embedded network owned by Trustpower) was based on information given by Aurora. The information was not supported by any database or spreadsheet. The information provided by Aurora were based information data passed to them by Trustpower in 2009. At the time Trustpower also provided a map, which indicates a location of lights. It is not GPS's the map, it is more like a sketch.

Audit commentary

Overall there are 10 street lights installed in Waipori Falls. All of them were physically audited, their location was confirmed, photos taken. Pioneer Energy created a spreadsheet in which all relevant information to submission are recorded. We confirm that the Waipori Falls spreadsheet contains information up to date at the time when this report is finalised.

As it is described in section 3.2, EMS as an agent for Pioneer Energy uses incorrect value of total load for these streetlights. The information is provided by Pioneer Energy, it is based on information recorded by a distributor. At the end of May'18 EMS was advised about correct value of total load od Waipori Falls streetlights and asked to use a washup process to correct volumes.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 2.1 With: 11(1) of Schedule 11.3 From: 01-Apr-17 To: 31-May-18	Incorrect value of the S/L load is used for reconciliation Potential impact: Low Actual impact: Low Audit history: None Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
Low	Controls are recorded as strong. Incorrect value of total load is used for reconciliation, but the difference is 3W. There is no impact on settlement outcomes therefore audit risk rating is recorded as low.		
Actions taken to resolve the issue		Completion date	Remedial action status

EMS has been advised of the corrected volume and will apply this going forward and will also apply retrospectively through the wash-up process.	24 May 2018	Identified
Preventative actions taken to ensure no further issues will occur	Completion date	
Any future changes will be processed through the DUMML database and advised to EMS monthly.	24 May 2018	

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 DUMML database must contain:

- *each ICP identifier for which the retailer is responsible for the DUMML*
- *the items of load associated with the ICP identifier.*

Audit observation

Dunedin Electricity assigned a single ICP (0000207893DE37B) to Waipori Falls streetlights. Overall there are 10 lights. The ICP is recorded in the Waipori Falls spreadsheet against each light.

Audit commentary

Compliance confirmed based on review of the Waipori Falls spreadsheet.

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 DUMML database must contain the location of each DUMML item.

Audit observation

The Waipori Falls spreadsheet contains the following information to assist to locate each street light:

- Name of road
- Pole number
- Additional description for two lights which are mounted on transformer structure
- photo

Audit commentary

Compliance confirmed based on review of the Waipori Falls spreadsheet.

Audit outcome

Compliant

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

Code reference

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

Code related audit information

The DUML database must contain:

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

Audit observation

All street lights are 70W High Pressure Sodium. Each light nominal wattage is 70W, ballast wattage 13W. Total wattage 10 lamps is 0.830 kW.

Audit commentary

Compliance confirmed based on review of the Waipori Falls spreadsheet. Calculation of total wattage for each lamp was based on the Standardised-table-to-streetlight-wattages provided by the Authority.

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

All lights were surveyed, and we confirm that each streetlight is recorded in the spreadsheet.

Audit commentary

Compliance confirmed based on a review of the Waipori Falls spreadsheet.

Audit outcome

Compliant

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

Code reference

Clause 11(3) of Schedule 15.3

Code related audit information

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

Audit observation

The Waipori Falls spreadsheet has a functionality to track additions and removals of lights.

Audit commentary

Pioneer does not have yet any arrangement with Clutha District Council to be notified of any changes to streetlight however it is very unlikely that any changes will happen in foreseeable future. We are talking about only 10 lights in remote rural area.

Pioneer Energy provided a copy of the spreadsheet and we confirm that structure of the spreadsheet is compliant. The spreadsheet is able to track the total load to be retrospectively derived for any given day. We tested the spreadsheet by entering dummy data in the test version of the spreadsheet.

Audit outcome

Compliant

Description	Recommendation	Audited party comment	Remedial action
Lack of a communication channel to be informed if any changes to the light occurs	Come in an agreement with Clutha District Council to be notified of any changed to the lights.	Pioneer has confirmed with the Clutha District Council that the council will advise Pioneer immediately should any changes occur to the streetlights.	Identified

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

There is a provision in the Waipori Falls spreadsheet to record changes to each streetlight, but Pioneer Energy has not established yet communication channels with Clutha District Council which maintains lights in Waipori Falls to be notified of any changes

Audit commentary

Pioneer Energy provided a copy of the spreadsheet and we confirm that structure of the spreadsheet is compliant. There are no historic information recorded but any changes going forwards will be noted.

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

All lights (10) in Waipori Falls were physically audited during this audit.

Audit commentary

We confirm, the information recorded in the Waipori Falls spreadsheet are complete and accurate. Our statement is based on the information available at the time of audit.

Audit outcome

Compliant

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

Code reference

Clause 15.2 and 15.37B(c)

Code related audit information

The audit must verify that:

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

Audit observation

Volume submissions for Waipori Falls streetlights are calculated and submitted by EMS on behalf of Pioneer Energy. Pioneer provided copy of submission files for WPV0061 for last three months.

Audit commentary

EMS submits NHH data for Waipori Falls lights as DST profile. Daily volumes are calculated using on/off times recorded by a logger installed in close by area. Waipori Falls streetlights are switched on/off by a sensor.

The DST profile approval requires the use of a logger and a pulse generator and a ripple relay that controls the on/off times of the streetlights. In case Waipori Falls streetlights, there is not a logger physically installed on ICP 0000207893DE37B circuit but the logger recording on/off times used for calculations is installed in the area close to Waipori Falls. The on/off times are controlled by a ripple receiver. The sensor which “governs” on/off times is installed in close by area when the sensor for Waipori Falls lights is.

In our opinion, it is an accurate representation of volumes because it uses real time information. It is much better representation that information recorded by Aurora, which says in the field “Unmetered load details”: 0.833 kW, 12 hours per day.

Non-compliance identifies because the value of total load provided to EMS should be 0.830 kW not 0.833 kW.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 3.2 With: 15.2 From: 01-Apr-17 To: 31-May-18	Incorrect value of the S/L load is used for reconciliation Potential impact: Low Actual impact: Low Audit history: None Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
Low	Controls are recorded as strong. Incorrect value of total load is used for reconciliation, but the difference is 3W. There is no impact on settlement outcomes therefore audit risk rating is recorded as low.		
Actions taken to resolve the issue		Completion date	Remedial action status
EMS has been advised of the corrected volume and will apply this going forward and will also apply retrospectively through the wash-up process.		24 May 2018	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Any future changes will be processed through the DUMML database and advised to EMS monthly.		24 May 2018	

CONCLUSION

PARTICIPANT RESPONSE

Nothing further to add.