

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

For

**NZTA WAIRARAPA AND GENESIS ENERGY
LIMITED**

Prepared by: Tara Gannon

Date audit commenced: 9 March 2018

Date audit report completed: 29 March 2018

Audit report due date: 1 June 2018

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EXECUTIVE SUMMARY

This audit of the NZTA Wairarapa DUMML database and processes was conducted at the request of Genesis Energy Limited (Genesis), in accordance with clause 15.37B. The purpose of this audit is to verify that the volume information is being calculated accurately, and that profiles have been correctly applied.

The audit was conducted in accordance with the audit guidelines for DUMML audits version 1.1, which became effective on 1 June 2017.

A Microsoft Access database is held by Dave Patten, on behalf of NZTA. Dave maintains this database in his capacity as a contractor to Power Services Wairarapa (PSW). PSW complete most of the field work on NZTA Wairarapa lights. When changes are made, they inform Dave Patten via email, who updates the database.

Dave provides a monthly report from the database to Genesis which is used to create submission for ICP 0020909000WR49A. ICP 0666002555PC35F is reconciled using the UNM profile.

The field audit of all 64 items of load connected to 0020909000WR49A found 100% accuracy.

The audit found two non-compliances, and no recommendations were made. The future risk rating of four indicates that the next audit be completed in 24 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	Submissions for ICP 0666002555PC35F are not based on an unmetered load database. In February 2018, the submission to the reconciliation manager was based on incorrect information. November and December 2017 submissions for ICP 0020909000WR49A were based upon incorrect data.	Moderate	Low	2	Cleared
Volume information accuracy	3.2	15.2 and 15.37B(c)	Submissions for ICP 0666002555PC35F are not based on an unmetered load database. In February 2018, the submission to the reconciliation manager was based on incorrect information. November and December 2017 submissions for ICP 0020909000WR49A were based upon incorrect data.	Moderate	Low	2	Cleared
Future Risk Rating						4	

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 the audit.

1.2. Structure of Organisation

Not applicable.

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
Dave Patten	Project Manager	Sole Trader
Shweta Arora	Reconciliation Systems Analyst	Genesis Energy
Craig Young	Excellence Leader - Reconciliation	Genesis Energy

1.4. Hardware and Software

The Microsoft Access database used for the management of DUML is hosted by Dave Patten. Dave is a sole trader and confirmed that the database back-up is in accordance with standard industry procedures, to a separate machine. Access to the database is restricted to Dave Patten.

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)
0020909000WR49A	Transit New Zealand street lighting, Masterton	MST0331	64	10090 W

ICP 0666002555PC35F is not recorded in the database, it is reconciled using the UNM profile. Unmetered daily kWh of 18 is recorded on the registry, and its exclusion from the DUML database is assessed as part of Genesis Energy's reconciliation participant audit, and in **section 2.1**.

1.7. Authorisation Received

All information was provided directly by Dave Patten and Genesis.

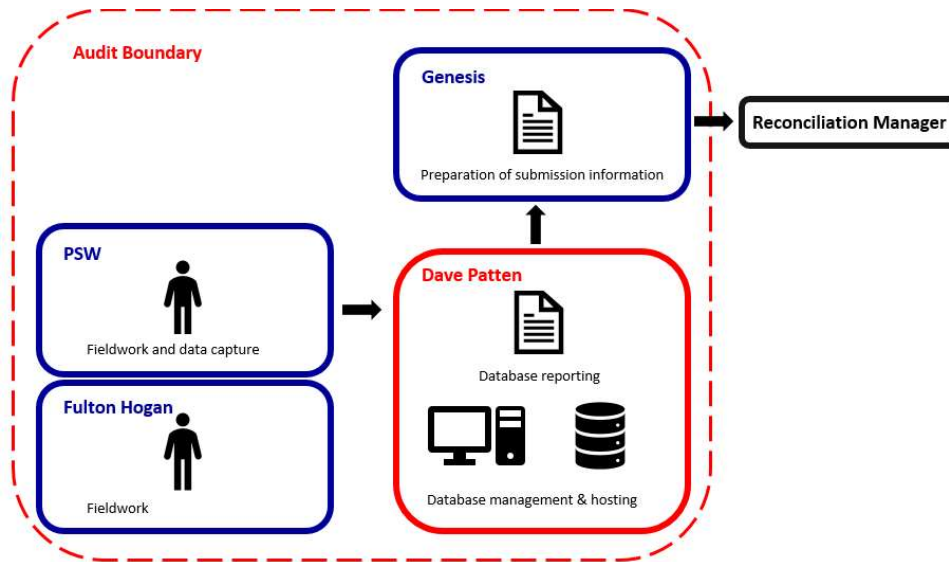
1.8. Scope of Audit

A Microsoft Access database is held by Dave Patten, on behalf of NZTA. Dave maintains this database in his capacity as a contractor to Power Services Wairarapa (PSW). PSW are subcontractors to Fulton Hogan, who hold the NZTA streetlight maintenance contract for Wairarapa.

Dave provides a monthly report from the database to Genesis which is used to create submission for ICP 0020909000WR49A. ICP 0666002555PC35F is reconciled using the UNM profile, based on daily unmetered kWh recorded on the registry.

PSW complete most of the field work on NZTA Wairarapa lights. When changes are made, they inform Dave Patten via email, who updates the database. Fulton Hogan occasionally completes fieldwork directly.

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 all 64 items of load on 9 March 2018.

1.9. Summary of previous audit

The previous audit was completed in March 2017 by Tara Gannon of Veritek Limited. Four non-compliances were identified, and three recommendations were raised. The statuses of the non-compliances and recommendations are described below.

Subject	Section	Clause	Non-compliance	Status
Deriving submission information	2.1	Clause 11(1) of schedule 15.3	Incorrect unmetered load was submitted for February 2017 for ICP 0020909000WR49A. This will be corrected in wash up submissions.	Cleared. Wash up submissions have occurred.
Deriving submission information	2.1	Clause 11(1) of schedule 15.3	The DUML database for ICP 0666002555PC35F is not used to prepare reconciliation submissions.	Still existing. Refer to section 2.1 .
Deriving submission information	2.1	Clause 11(1) of schedule 15.3	The daily unmetered kWh recorded on the registry and used for reconciliation submissions for ICP 0666002555PC35F was incorrect.	Cleared. Daily unmetered load was corrected during the 2017 audit and wash up submissions have occurred.

Subject	Section	Clause	Non-compliance	Status
Overlap with Masterton DUML database	2.3	Clause 11(3) of schedule 15.3	11 lamps between the end of the 50kmh zone at Masterton's north entrance and Kiriwhapapa Road are recorded in both the NZTA Masterton and NZTA Wairarapa databases.	Cleared. The NZTA Masterton database is not being used.

Table of Recommendations

Subject	Section	Clause	Recommendation for improvement	Status
Data transmission	1.9	Clause 20 of schedule 15.2	Require the monthly report from the database to be password protected.	Not implemented.
Capacity of each item of load	2.2.4	Clause 11(2)(d) of Schedule 15.3	The lamp size field should be renamed to include the unit of measure, or an additional field added containing the lamp wattage.	Not implemented.
Tracking of load changes	2.3	Clause 11(3) of Schedule 15.3	Fulton Hogan should advise PSW where they have completed work which requires a database update.	Cleared. No evidence of incorrect information was found.

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

Genesis 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

Genesis reconciles the load for ICP reconciles the load for ICP 0020909000WR49A as NHH using the CST profile. The calculation is based on the database information provided by Dave Patten, which includes the average hours on. I checked the submission for January 2017 to February 2018 and confirmed the calculation method was correct.

ICP 0666002555PC35F is not recorded in the database, it is reconciled using the UNM profile. Unmetered daily kWh of 18 (6570 kWh per annum) is recorded on the registry, and its exclusion from the DUML database is assessed as part of Genesis Energy's reconciliation participant audit and recorded as non-compliance below. Submissions calculations for January 2017 to February 2018 were checked and confirmed to be based upon the number of days in the month multiplied by the daily unmetered kWh.

Some manual processing errors in submissions were identified, because the major account billing team did not use the correct email data:

- In November 2017, daily unmetered kWh of 84.5 was applied instead of 114.2 for ICP 0020909000WR49A. In December, the billing team attempted to correct the under submission by applying a larger unmetered volume in December 2017. Following this, the consumption over the two months was correct, but the November consumption was too low, and the December consumption was too high.
- In February 2018, incorrect daily unmetered kWh of 36 was applied for ICP 0666002555PC35F.

Genesis intends to reverse both accounts, correct the consumption, and rebill. Once this process is complete, revised consumption will be submitted to the reconciliation manager.

Audit outcome

Non-compliant

Non-compliance	Description		
<p>Audit Ref: 2.1</p> <p>With: Clause 11(1) of Schedule 15.3</p> <p>From: unknown</p> <p>To: 09-Mar-18</p>	<p>Submissions for ICP 0666002555PC35F are not based on an unmetered load database. In February 2018, the submission to the reconciliation manager was based on incorrect information.</p> <p>November and December 2017 submissions for ICP 0020909000WR49A were based upon incorrect data.</p> <p>Potential impact: Low</p> <p>Actual impact: None</p> <p>Audit history: Once previously</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>		
Audit risk rating	Rationale for audit risk rating		
<p>Low</p>	<p>Controls are rated as moderate and the risk as low because:</p> <ul style="list-style-type: none"> the unmetered load on the registry for ICP 0666002555PC35F is believed to be correct, resulting in no impact on submission accuracy. Incorrect submission data for November 2017, December 2017 and February 2018 will be corrected and washed up. 		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>Submissions are based on the database information (ICP 0020909000WR49A) and registry information for (ICP 0666002555PC35F) the information being provided by the contracted party is correct. The fact that the mistake was made by internal trader processes is an auditable requirement under the participant audit. As Stated (executive summary) the information provided was 100% accurate. These issues were cleared immediately upon being advised and the revision process will correct the 30 kWh error.</p>		<p>01/04/2018</p>	<p>Cleared</p>
Preventative actions taken to ensure no further issues will occur		Completion date	
<p>Have spoken with GENE MABT to ensure if an error has occurred that rebilling and data correction is required within the correct period.</p>		<p>01/04/2018</p>	

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

All items of load relate to one ICP, and the ICP number is recorded in the database.

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

All items of load had street address information recorded.

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

The 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 description of the load type, lamp wattage and gear wattage are recorded 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 all items of load was undertaken.

Audit commentary

The field audit findings are detailed in the table below. No count differences were identified.

Address	Database Count	Field Count	Count differences	Wattage differences	Comments
Carterton Rural					
SH2	23	23	-	-	
Featherston					
Fitzherbert St	4	4	-	-	
Revans St	2	2	-	-	
Greytown					
Main St	4	4	-	-	
SH2	2	2	-	-	
Martinborough					
Kitchener St	6	6	-	-	
SH53	3	3	-	-	
Masterton					
Opaki Rd	3	3	-	-	
Masterton Rural					
SH2	8	8	-	-	
South Wairarapa District Council Rural					
Bidwills Cutting Rd	3	3	-	-	

Address	Database Count	Field Count	Count differences	Wattage differences	Comments
SH2	2	2	-	-	
SH53	4	4	-	-	
Total	64	64	-	-	

Audit outcome

Compliant

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

Code reference

Clause 11(3) of Schedule 15.3

Code related audit information

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

Audit observation

The process for tracking of changes in the database was examined.

Audit commentary

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 monthly report to Genesis is sufficient to achieve compliance.

The processes were reviewed for new lamp connections and the tracking of load changes due to faults and maintenance.

PSW complete most of the field work on NZTA Wairarapa lights. When changes are made, they inform Dave Patten via email, who updates the database. There are very few new connections or changes.

Night patrols are completed monthly by Dave Patten, who reports any maintenance issues arising to PSW. The normal email process is followed to advise Dave of any changes made.

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

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

Audit observation

The database was checked for audit trails.

Audit commentary

The excel spreadsheet contains an audit trail. The audit trail includes the date, and a description of the before and after values. User is not recorded, but the database is only maintained by Dave Patten.

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 audit findings were used to determine if the information contained in the database is complete and accurate.

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

Audit commentary

The database was found to be accurate.

Wattages were checked against the published standardised wattage table produced by the Electricity Authority and found to be correct.

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

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 against the submitted figure to confirm accuracy.

Audit commentary

Genesis reconciles the load for ICP reconciles the load for ICP 0020909000WR49A as NHH using the CST profile. The calculation is based on the database information provided by Dave Patten, which includes the average hours on. I checked the submission for January 2017 to February 2018 and confirmed the calculation method was correct, and profiles were correctly applied.

ICP 0666002555PC35F is not recorded in the database, it is reconciled using the UNM profile. Unmetered daily kWh of 18 (6570 kWh per annum) is recorded on the registry, and its exclusion from the DUML database is assessed as part of Genesis Energy's reconciliation participant audit and recorded as non-compliance below. Submissions calculations for January 2017 to February 2018 were checked

and confirmed to be based upon the number of days in the month multiplied by the daily unmetered kWh. Profiles were correctly applied.

Some manual processing errors in submissions were identified, because the major account billing team did not use the correct email data:

- In November 2017, daily unmetered kWh of 84.5 was applied instead of 114.2 for ICP 0020909000WR49A. In December, the billing team attempted to correct the under submission by applying a larger unmetered volume in December 2017. Following this, the consumption over the two months was correct, but the November consumption was too low, and the December consumption was too high.
- In February 2018, incorrect daily unmetered kWh of 36 was applied for ICP 0666002555PC35F.

Genesis intends to reverse both accounts, correct the consumption, and rebill. Once this process is complete, revised consumption will be submitted to the reconciliation manager.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 3.2 With: Clause 15.2 and 15.37B(c) From: unknown To: 09-Mar-18	Submissions for ICP 0666002555PC35F are not based on an unmetered load database. In February 2018, the submission to the reconciliation manager was based on incorrect information. November and December 2017 submissions for ICP 0020909000WR49A were based upon incorrect data. Potential impact: Low Actual impact: None Audit history: Once previously Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	Controls are rated as moderate and the risk as low because: <ul style="list-style-type: none"> • the unmetered load on the registry for ICP 0666002555PC35F is believed to be correct, resulting in no impact on submission accuracy. • Incorrect submission data for November 2017, December 2017 and February 2018 will be corrected and washed up. 		
Actions taken to resolve the issue	Completion date	Remedial action status	
Genesis found that the submission process for the UML had errored and duplicated information for this site. It has since been corrected in which the revision process will cater for the correction is submission information. This is not a DUMML database error.	01/04/2018	Cleared	

Preventative actions taken to ensure no further issues will occur	Completion date	
Validation processes amended to look for any potential erroneous uml read data getting into the NHH reconciliation tool.	01/04/2018	

CONCLUSION

A Microsoft Access database is held by Dave Patten, on behalf of NZTA. Dave maintains this database in his capacity as a contractor to Power Services Wairarapa (PSW). PSW complete most of the field work on NZTA Wairarapa lights. When changes are made, they inform Dave Patten via email, who updates the database.

Dave provides a monthly report from the database to Genesis which is used to create submission for ICP 0020909000WR49A. ICP 0666002555PC35F is reconciled using the UNM profile.

The field audit of all 64 items of load connected to 0020909000WR49A found 100% accuracy.

The audit found two non-compliances, and no recommendations were made. The future risk rating of four indicates that the next audit be completed in 24 months.

PARTICIPANT RESPONSE

The information being provided to Genesis is of high quality. The DUML audit highlight two internal processing errors in which have influenced the submission information provided to the market. This error was not related to the information provided by Genesis's contracted party in its DUML database. Genesis have since rectified the two errors and have revisited both internal process to help prevent such error from happening.