

ELECTRICITY INDUSTRY PARTICIPATION CODE
DISTRIBUTED UNMETERED LOAD AUDIT REPORT

The logo for Veritek, featuring the word "VERITEK" in a blue serif font. A vertical blue line is positioned to the left of the text, and a horizontal blue line is positioned below the text, intersecting at the letter 'V'.

For

GREATER WELLINGTON REGIONAL
COUNCIL AND
MERIDIAN ENERGY

Prepared by: Steve Woods

Date audit commenced: 17 August 2021

Date audit report completed: 2 October 2021

Audit report due date: 09-Oct-21

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EXECUTIVE SUMMARY

This audit of the **Greater Wellington Regional Council Unmetered Streetlights (GWRC)** DUML database and processes was conducted at the request of **Meridian Energy Limited (Meridian)**, in accordance with clause 15.37B. The purpose of this audit is to verify that the volume information is being calculated accurately, and that profiles have been correctly applied.

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

The GWRC lights are in the Paremata and Porirua railway station carparks. The data for is held in GWRC's SAP system. GWRC conducted a full field audit and updated SAP during the audit period, however it appears not all lights were populated into SAP. The output from SAP was used as the basis for the audit.

My field audit identified at least 21 lights missing from the database. Under submission could be at least 13,537 kWh per annum. The database also has description and capacity discrepancies. GWRC intends to implement a new database in order to resolve these issues.

Locating each item of load was difficult because SAP does not have GPS coordinates or location descriptions.

The audit found six non-compliance issues. The future risk rating of 34 indicates that the next audit be completed in three months. I agree with this recommendation because as mentioned in the last audit, it is not a big job to conduct a 100% field audit of both carparks to update a new database with accurate information.

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	Under submission of approx. 13,537 kWh per annum.	Weak	Medium	6	Identified
ICP identifier	2.2	11(2)(a) and (aa) of Schedule 15.3	ICP identifier not in the database.	None	Low	5	Identified
Location of items of load	2.3	11(2)(b) of Schedule 15.3	Location information not sufficient to locate each item of load.	None	Low	5	Identified
All load recorded in the database	2.5	11(2A) of Schedule 15.3	21 items of load are missing from the database.	Weak	Medium	6	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Database accuracy	3.1	15.2 and 15.37B(b)	Fitting PAR 137610 has been removed. 21 items of load are missing from the database at Porirua. Some gear wattages incorrect. The ICP identifier is not recorded. Location information is insufficient.	Weak	Medium	6	Identified
Volume information accuracy	3.2	15.2 and 15.37B(c)	Under submission of approx. 13,537 kWh per annum.	Weak	Medium	6	Identified
Future Risk Rating						34	

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

RECOMMENDATIONS

Subject	Section	Description	Action
		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

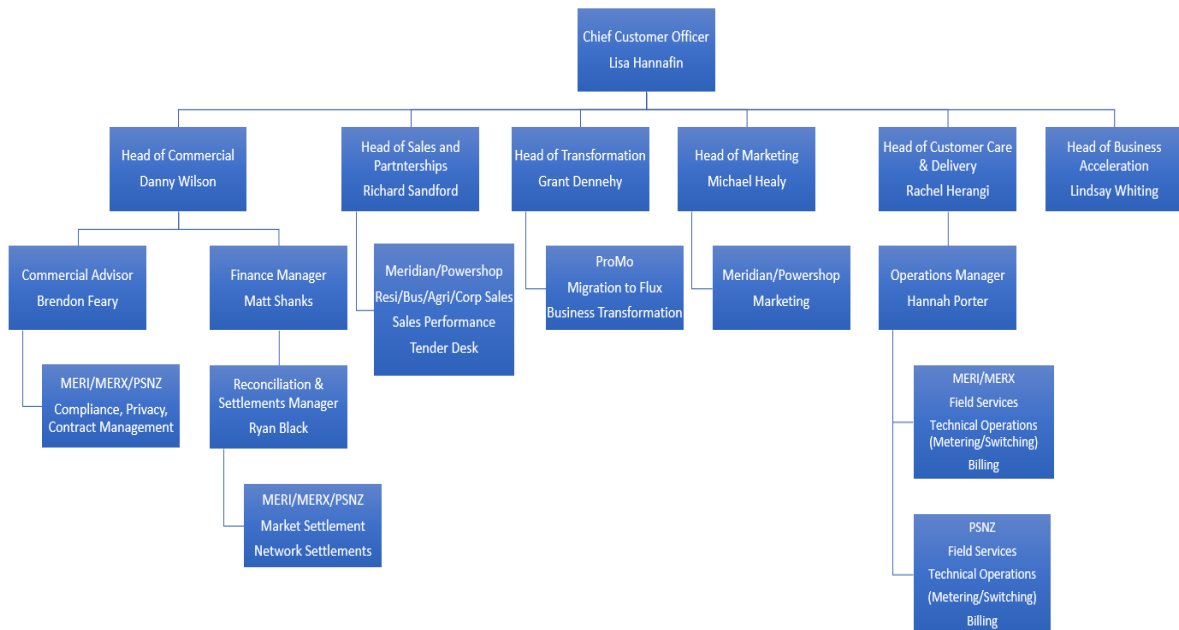
Section 11 of the Electricity Industry Act provides for the Electricity Authority to exempt any participant from compliance with all or any of the clauses.

Audit commentary

Meridian confirms that there are no exemptions in place relevant to the scope of this audit.

1.2. Structure of Organisation

Meridian provided the relevant organisational structure:



1.3. Persons involved in this audit

Auditor:

Steve Woods

Veritek Limited

Electricity Authority Approved Auditor

Other personnel assisting in this audit were:

Name	Title	Company
Amy Cooper	Compliance Officer	Meridian
Danielle McEveney	Fixed Assets Adviser	GWRC

1.4. Hardware and Software

Data is held in GWRC's SAP system. Back-up arrangements were confirmed to be in accordance with standard industry practice.

Systems used by the trader and their agent to calculate submissions are assessed as part of their reconciliation participant audits.

1.5. Breaches or Breach Allegations

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

1.6. ICP Data

ICP Number	Description	NSP	Profile	Number of items of load	Database wattage (watts)
0000160523CK83F	MASTER ICP GWRC STREETLIGHTS PNI0331	PNI0331	UML	55	9,828

1.7. Authorisation Received

All information was provided directly by Meridian or GWRC.

1.8. Scope of Audit

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

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

The data for GWRC is held in GWRC's SAP system. GWRC conducted a full field audit and updated SAP during the audit period. The output from SAP was used as the basis for the audit.

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 field audit was undertaken of all lights at the Paremata and Porirua railway stations.

1.9. Summary of previous audit

The previous audit was finalised in May 2021. The table below shows that most issues are still existing.

Subject	Section	Clause	Non-Compliance	Status
Audit timeliness	1.10	16A.26 and 17.295F	Audit conducted late.	Cleared
Deriving submission information	2.1	11(1) of Schedule 15.3	Under submission of approx. 13,700 kWh per annum.	Still existing
ICP identifier	2.2	11(2)(a) and (aa) of Schedule 15.3	ICP identifier not in the database.	Still existing
Location of items of load	2.3	11(2)(b) of Schedule 15.3	Location information not sufficient to locate each item of load.	Still existing
Description and capacity	2.4	11(2)(c) and (d) of Schedule 15.3	The database contains insufficient information to derive make and model for 25 items of load. Wattage details are not present.	Cleared
All load recorded in the database	2.5	11(2A) of Schedule 15.3	14 items of load are missing from the database.	Still existing
Tracking of load changes	2.6	11(3) of Schedule 15.3	Date information is insufficient to derive the load for any given day.	Cleared
Database accuracy	3.1	15.2 and 15.37B(b)	The database has many gaps and is inaccurate.	Still existing
Volume information accuracy	3.2	15.2 and 15.37B(c)	Under submission of approx. 13,700 kWh per annum.	Still existing

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

Meridian have requested Veritek to undertake this streetlight audit.

Audit commentary

This report confirms compliance with the requirement to ensure an audit is conducted.

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

Meridian reconciles this DUML load using the UNM profile. The total volume submitted to the Reconciliation Manager is based on the registry daily kWh figure, which is derived from a kW figure from information supplied by GWRC at the time the ICP was created, but with the gear wattage corrected because the gear wattage in the database is incorrect. The kW figure is multiplied by 11.8 hours per day. I checked the most recent month, and the calculation is correct.

The kW figure in the registry is based on an updated database extract provided by GWRC in late 2020.

The full field audit found that at least 21 lights were missing from the database, leading to under submission of approx. 13,537 kWh per annum.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 2.1 With: Clause 11(1) of Schedule 15.3 From: 01-Mar-19 To: 20-Aug-21	Under submission of approx. 13,537 kWh per annum. Potential impact: Medium Actual impact: Medium Audit history: Once Controls: Weak Breach risk rating: 6		
Audit risk rating	Rationale for audit risk rating		
Medium	The controls are recorded as weak, because they are not sufficient to ensure database accuracy. Under submission could be at least 13,537 kWh per annum, therefore the audit risk rating is medium.		
Actions taken to resolve the issue		Completion date	Remedial action status
GWRC are conducting a field audit to capture wattage details for the items of load that are missing from their current database. Historic submission information will be revised once this information is received.		31 Oct 2021 30 Nov 2021	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
GWRC are implementing a new asset database which will record ICP, wattage and GIS information for all assets.		31 Dec 2021	

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

The database was checked to confirm an ICP was recorded against each item of load.

Audit commentary

The database does not contain the ICP identifier.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 2.2 With: Clause 11(2)(a) and (aa) of Schedule 15.3 From: 01-Mar-19 To: 17-Aug-21	ICP identifier not in the database. Potential impact: Low Actual impact: Low Audit history: Once Controls: None Breach risk rating: 5		
Audit risk rating	Rationale for audit risk rating		
Low	The database does not have a field for the ICP. 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
GWRC are implementing a new asset database which will have capability to record ICP against all assets.		31 Dec 2021	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
GWRC are implementing a new asset database which will have capability to record ICP against all assets.		31 Dec 2021	

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

Audit commentary

The database contains a street name but there is not sufficient information to locate each item of load. GPS coordinates are preferable.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 2.3 With: Clause 11(2)(b) of Schedule 15.3 From: 01-Mar-19 To: 17-Aug-21	Location information not sufficient to locate each item of load. Potential impact: Low Actual impact: Low Audit history: Once Controls: None Breach risk rating: 5		
Audit risk rating	Rationale for audit risk rating		
Low	The database does not contain location details apart from street name. The impact on settlement and participants is minor; therefore, the audit risk rating is low. The main impact is that the audit is difficult to conduct and discrepancies are difficult to identify.		
Actions taken to resolve the issue		Completion date	Remedial action status
GWRC are implementing a new asset database which will include GIS information for all assets.		31 Dec 2021	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
GWRC are implementing a new asset database which will include GIS information for all assets.		31 Dec 2021	

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 DUMML database must contain:

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

Audit observation

The database was checked to confirm that it contained a field for lamp type and wattage capacity and included any ballast or gear wattage and that each item of load had a value recorded in these fields.

Audit commentary

The database contains fields for lamp make, model, wattage and gear wattage. The gear wattages are not correct, this is recorded as non-compliance in **section 3.1**.

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

I checked all lights at Porirua and Paremata carparks. The database information is incomplete, and it was difficult to identify whether there were lights missing from the database.

Audit commentary

I checked all lights at Porirua and Paremata carparks. The database does not contain location details, therefore it's difficult to be certain of accuracy. One definite discrepancy is that one of the Paramata lights has been removed. Some records contain an "SAP Equipment" identifier in the database, and GWRC provided an associated plan with lights recorded, which enabled me to confirm that "PAR 137610" had been removed.

The Porirua data appeared to be incomplete. GWRC provided an additional list on 19 August 2021 with 55 lights rather than the original 34 lights.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 2.5 With: Clause 11(2A) of Schedule 15.3 From: 01-Mar-19 To: 20-Aug-21	21 items of load are missing from the database. Potential impact: Medium Actual impact: Medium Audit history: Once Controls: Weak Breach risk rating: 6		
Audit risk rating	Rationale for audit risk rating		
Medium	The controls are recorded as weak, because they are not sufficient to ensure database accuracy. Under submission could be at least 13,537 kWh per annum, therefore the audit risk rating is medium.		
Actions taken to resolve the issue		Completion date	Remedial action status
GWRC are conducting a field audit to capture wattage details for the items of load that are missing from their current database. Historic submission information will be revised once this information is received.		31 Oct 2021	Identified
		30 Nov 2021	
Preventative actions taken to ensure no further issues will occur		Completion date	

GWRC are implementing a new asset database which will record ICP, wattage and GIS information for all assets.	31 Dec 2021	
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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 DUMML 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 discussed with GWRC.

Audit commentary

Fieldwork is conducted by Commercial Signals, who maintain a spreadsheet of changes. These are passed to GWRC and entered into SAP. The database contains a “date installed”, which was populated for all items of load.

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 SAP database has 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

I reviewed the content of the database, and I checked the two relevant railway carparks to determine accuracy.

Audit commentary

Database accuracy based on the field audit

The database does not contain location details, therefore it's difficult to be certain of accuracy. One definite discrepancy is that one of the Paramata lights has been removed. Some records contain an "SAP Equipment" identifier in the database, and GWRC provided an associated plan with lights recorded, which enabled me to confirm that "PAR 137610" had been removed.

The Porirua data appeared to be incomplete. GWRC provided an additional list on 19 August 2021 with 55 lights rather than the original 34 lights.

Lamp description and capacity accuracy

The database contains lamp description and wattage information. Gear wattages are incorrect for all nine non-LED lights. The figure used is 10% of the lamp wattage, which is close but not exact. The "overs and unders" largely cancel each other out. Meridian uses a correct figure for submission, not the database figure, but it is still required to be correct.

NZTA lighting

NZTA lighting is included in a separate NZTA database with different ICPs.

ICP accuracy

The ICP is not recorded.

Location accuracy

The database contains a street name but there is not sufficient information to locate each item of load. GPS coordinates are preferable.

Change management process findings

Fieldwork is conducted by Commercial Signals, who maintain a spreadsheet of changes. These are passed to GWRC and entered into SAP. The database contains an installation date, which is populated.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 3.1 With: Clause 15.2 and 15.37B(b) From: 01-Mar-19 To: 20-Aug-21	Fitting PAR 137610 has been removed. 21 items of load are missing from the database at Porirua. Some gear wattages incorrect. The ICP identifier is not recorded. Location information is insufficient Potential impact: Medium Actual impact: Low Audit history: Once Controls: Weak Breach risk rating: 6		
Audit risk rating	Rationale for audit risk rating		
Medium	The controls are recorded as weak because they are not sufficient to ensure database accuracy. Under submission could be at least 13,537 kWh per annum, therefore, the audit risk rating is medium.		
Actions taken to resolve the issue		Completion date	Remedial action status
GWRC are conducting a field audit to capture wattage details for the items of load that are missing from their current database. Historic submission information will be revised once this information is received. Fitting PAR 137610 has been removed from the database		31 Oct 2021 30 Nov 2021 Complete	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
GWRC are implementing a new asset database which will record ICP, wattage and GIS information for all assets.		31 Dec 2021	

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

Meridian reconciles this DUML load using the UNM profile. The total volume submitted to the Reconciliation Manager is based on the registry daily kWh figure, which is derived from a kW figure from information supplied by GWRC at the time the ICP was created, multiplied by 11.8 hours per day. I checked the most recent month, and the calculation is correct.

The kW figure in the registry is based on an updated database extract provided by GWRC in late 2020.

The full field audit found that at least 21 lights were missing from the database, leading to under submission of approx. 13,537 kWh per annum.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 3.2 With: Clause 15.2 and 15.37B(c) From: 01-Mar-19 To: 20-Aug-21	Under submission of approx. 13,537 kWh per annum. Potential impact: Medium Actual impact: Medium Audit history: Once Controls: Weak Breach risk rating: 6		
Audit risk rating	Rationale for audit risk rating		
Medium	The controls are recorded as weak because they are not sufficient to ensure database accuracy. Under submission could be at least 13,537 kWh per annum, therefore the audit risk rating is medium.		
Actions taken to resolve the issue		Completion date	Remedial action status
GWRC are conducting a field audit to capture wattage details for the items of load that are missing from their current database. Historic submission information will be revised once this information is received.		31 Oct 2021	Identified
		30 Nov 2021	
Preventative actions taken to ensure no further issues will occur		Completion date	
GWRC are implementing a new asset database which will record ICP, wattage and GIS information for all assets.		31 Dec 2021	

CONCLUSION

The GWRC lights are in the Paremata and Porirua railway station carparks. The data for is held in GWRC's SAP system. GWRC conducted a full field audit and updated SAP during the audit period, however it appears not all lights were populated into SAP. The output from SAP was used as the basis for the audit.

My field audit identified at least 21 lights missing from the database. Under submission could be at least 13,537 kWh per annum. The database also has description and capacity discrepancies. GWRC intends to implement a new database in order to resolve these issues.

Locating each item of load was difficult because SAP does not have GPS coordinates or location descriptions.

The audit found six non-compliance issues. The future risk rating of 34 indicates that the next audit be completed in three months. I agree with this recommendation because as mentioned in the last audit, it is not a big job to conduct a 100% field audit of both carparks to update a new database with accurate information.

PARTICIPANT RESPONSE