

ELECTRICITY INDUSTRY PARTICIPATION CODE
DISTRIBUTED UNMETERED LOAD AUDIT REPORT

VERITEK

For

GREATER WELLINGTON REGIONAL
COUNCIL AND
MERIDIAN ENERGY

Prepared by: Steve Woods

Date audit commenced: 23 June 2022

Date audit report completed: 8 July 2022

Audit report due date: 09-Mar-22

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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 a new database created by GWRC during the audit period.

GWRC has updated the database to include all of the lights, but GPS coordinates are not yet populated and some gear wattages require correction.

Meridian intends to revise the daily kWh figure used for submission once this report is complete. Revisions will be conducted to correct under submission of approx. of 7,824 kWh per annum.

The audit found five non-compliance issues. The future risk rating of 12 indicates that the next audit be completed in 12 months. I agree with this recommendation because whilst the database is largely accurate, it will be helpful to have the GPS coordinates populated.

The matters raised are detailed below:

AUDIT SUMMARY

NON-COMPLIANCES

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Distributed unmetered load audits	1.10	16A.26 and 17.295F	Audit conducted late	Strong	Low	1	Cleared
Deriving submission information	2.1	11(1) of Schedule 15.3	Over submission of 192 kWh per annum due to incorrect gear wattage. Under submission of approx. 7,824 kWh per annum due to the historic incorrect database information.	Moderate	Low	2	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
Database accuracy	3.1	15.2 and 15.37B(b)	Location information not sufficient to locate each item of load. Some gear wattages incorrect.	Moderate	Low	2	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Volume information accuracy	3.2	15.2 and 15.37B(c)	Over submission of 192 kWh per annum due to incorrect gear wattage. Under submission of approx. 7,824 kWh per annum due to the historic incorrect database information.	Moderate	Low	2	Identified
Future Risk Rating						12	

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

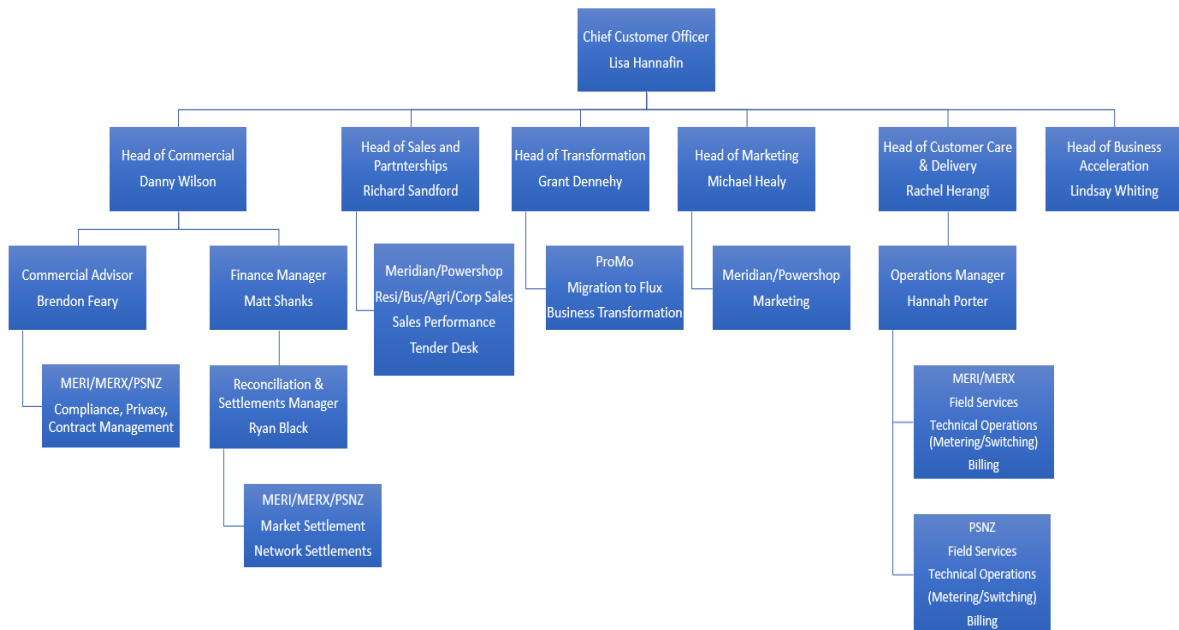
Section 11 of the Electricity Industry Act provides for the Electricity Authority to exempt any participant from compliance with all or any of the clauses.

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
Melanie Matthews	Quality and Compliance Advisor	Meridian
Danielle Nowell-Usticke	Fixed Assets Adviser	GWRC

1.4. Hardware and Software

Data is held in GWRC's Technology One ERP system, called Ngātahi. 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	73	11,662

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.

Data is held in GWRC's Technology One ERP system, called Ngātahi.

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 October 2021. The table below shows that many issues are now resolved.

Subject	Section	Clause	Non-Compliance	Status
Deriving submission information	2.1	11(1) of Schedule 15.3	Under submission of approx. 13,537 kWh per annum.	Still existing for a smaller number.
ICP identifier	2.2	11(2)(a) and (aa) of Schedule 15.3	ICP identifier not in the database.	Cleared
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
All load recorded in the database	2.5	11(2A) of Schedule 15.3	21 items of load are missing from the database.	Cleared
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.	Cleared Cleared Still existing Cleared Still existing
Volume information accuracy	3.2	15.2 and 15.37B(c)	Under submission of approx. 13,537 kWh per annum.	Still existing for a smaller number.

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 audit was due for completion by 09/03/2022, but it was delayed while GWRC populated their new database.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 1.10 With: Clause 16A.26 and 17.295F From: 09-Mar-22 To: 27-Jun-22	Audit conducted late Potential impact: Low Actual impact: Low Audit history: None Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
Low	The controls are recorded as strong because Meridian had been liaising with GWRC to ensure their database was accurate and that an audit was conducted. The audit was completed with more accurate data due to the delay, therefore the audit risk rating is recorded as low.		
Actions taken to resolve the issue		Completion date	Remedial action status
The GWRC had advised Meridian that they were in transition over to a new database system. Meridian remained in contact with GWRC until confirmation of the transition was complete. Meridian worked with GWRC to have as many previous non-compliances cleared before the next audit took place.		28/06/2022	Cleared
Preventative actions taken to ensure no further issues will occur		Completion date	

Meridian will continue to follow up with GWRC to complete the required corrections and to maintain the installed updates and changes to the database.	05/01/2023	
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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 UML 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 out of their previous database. The kW figure is multiplied by 11.8 hours per day. I checked the most recent month, and the calculation is correct.

The full field audit found that the database was accurate with regard to lamp wattage and lamp count.

As recorded in **Section 3.1**, 15 records in the database have the incorrect gear wattage, leading to over submission of 192 kWh per annum.

The kW figure of 9.830 from the previous database is still being used, but the correct figure is 11.662. Under submission of 7,824 kWh per annum is occurring. Meridian intends to update this figure and conduct revisions as soon as this audit is complete.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 2.1 With: Clause 11(1) of Schedule 15.3 From: 25-Mar-20 To: 27-Jun-22	Over submission of 192 kWh per annum due to incorrect gear wattage. Under submission of approx. 7,824 kWh per annum due to the historic incorrect database information. Potential impact: Medium Actual impact: Low Audit history: Twice Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	The controls are recorded as moderate, because Meridian has worked with GWRC to improve the database accuracy and they were waiting for the field audit to be conducted before updating the registry. Under submission is occurring of approx. 7,824 kWh per annum, therefore the audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
Meridian has advised GWRC of the inaccuracies. GWRC advises that they are in the process of swapping all the light fittings to LED over the next twelve months. This will remove the gear wattage altogether.		05/07/2023	Identified
Meridian has corrected the daily kWh figure used for submission and will revise historic submission in accordance with wash up submissions.		05/10/2022	
Preventative actions taken to ensure no further issues will occur		Completion date	
Meridian will continue to follow up with GWRC to complete the required corrections and to maintain the installed updates and changes to the database.		05/01/2023	

2.2. ICP identifier and items of load (Clause 11(2)(a) and (aa) of Schedule 15.3)

Code reference

Clause 11(2)(a) and (aa) of Schedule 15.3

Code related audit information

The DUML database must contain:

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

Audit observation

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

Audit commentary

The database contains the relevant ICP identifier.

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 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: 27-Jun-22	Location information not sufficient to locate each item of load. Potential impact: Low Actual impact: Low Audit history: Twice 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
Meridian has advised GWRC of the inaccuracies. GWRC advise they have capability in the new system to carry GPS data along with the assets and this is something they are planning to address in the next twelve months. Porirua and Paremata will be a focus.	05/07/2023	Identified
Preventative actions taken to ensure no further issues will occur	Completion date	

Meridian will continue to follow up with GWRC to complete the required corrections and to maintain the installed updates and changes to the database.	05/01/2023	
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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 DUMML for which it is responsible is recorded in this database.

Audit observation

I checked all lights at Porirua and Paremata carparks.

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 but the lamp count and wattages overall appear to be accurate.

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 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 the database. The database contains a “commission date”, 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 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

The 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

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 but the lamp count and wattages overall appear to be accurate.

Lamp description and capacity accuracy

The database contains lamp description and wattage information. Gear wattages are incorrect for all 15 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, but there is potential for over submission of 192 kWh per annum.

NZTA lighting

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

ICP accuracy

The ICP is recorded for all items of load.

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 the database. The database contains a "commission 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: 27-Jun-22	Location information not sufficient to locate each item of load. Some gear wattages incorrect Potential impact: Medium Actual impact: Low Audit history: Twice Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	The controls are recorded as moderate because most database fields are accurate. The database is largely accurate therefore the audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
Meridian has advised GWRC of the inaccuracies. GWRC advise they have capability in the new system to carry GPS data along with the assets and this is something they are planning to address in the next twelve months. Porirua and Paremata will be a focus. GWRC advises that they are in the process of swapping all the light fittings to LED over the next twelve months. This will remove the gear wattage altogether.		05/07/2023 05/07/2023	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Meridian will continue to follow up with GWRC to complete the required corrections and to maintain the installed updates and changes to the database.		05/01/2023	

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 UML 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 out of their previous database. The kW figure is multiplied by 11.8 hours per day. I checked the most recent month, and the calculation is correct.

The full field audit found that the database was accurate with regard to lamp wattage and lamp count.

As recorded in **Section 3.1**, 15 records in the database have the incorrect gear wattage, leading to over submission of 192 kWh per annum.

The kW figure of 9.830 from the previous database is still being used, but the correct figure is 11.662. Under submission of 7,824 kWh per annum is occurring. Meridian intends to update this figure and conduct revisions as soon as this audit is complete.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 3.2 With: Clause 15.2 and 15.37B(c) From: 01-Mar-19 To: 27-Jun-22	Over submission of 192 kWh per annum due to incorrect gear wattage. Under submission of approx. 7,824 kWh per annum due to the historic incorrect database information. Potential impact: Medium Actual impact: Low Audit history: Twice Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Medium	The controls are recorded as moderate, because Meridian has worked with GWRC to improve the database accuracy and they were waiting for the field audit to be conducted before updating the registry. Under submission is occurring of approx. 7,824 kWh per annum, therefore the audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
Meridian has advised GWRC of the inaccuracies. GWRC advises that they are in the process of swapping all the light fittings to LED over the next twelve months. This will remove the gear wattage altogether.		05/07/2023	Identified
Meridian has corrected the daily kWh figure used for submission and will revise historic submission in accordance with wash up submissions.		05/10/2022	
Preventative actions taken to ensure no further issues will occur		Completion date	

Meridian will continue to follow up with GWRC to complete the required corrections and to maintain the installed updates and changes to the database.	05/01/2023	
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CONCLUSION

The GWRC lights are in the Paremata and Porirua railway station carparks. The data for is held in a new database created by GWRC during the audit period.

GWRC has updated the database to include all of the lights, but GPS coordinates are not yet populated and some gear wattages require correction.

Meridian intends to revise the daily kWh figure used for submission once this report is complete. Revisions will be conducted to correct under submission of approx. of 7,824 kWh per annum.

The audit found five non-compliance issues. The future risk rating of 12 indicates that the next audit be completed in 12 months. I agree with this recommendation because whilst the database is largely accurate, it will be helpful to have the GPS coordinates populated.

PARTICIPANT RESPONSE