

ELECTRICITY INDUSTRY PARTICIPATION CODE  
DISTRIBUTED UNMETERED LOAD AUDIT REPORT

VERITEK

For

BULLER DISTRICT COUNCIL  
RAMM DATABASE  
AND MERIDIAN ENERGY

Prepared by: Rebecca Elliot

Date audit commenced: 8 November 2018

Date audit report completed: 27 November 2018

Audit report due date: 01-Dec-18

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## EXECUTIVE SUMMARY

This audit of the Buller District Council (**BDC**) DUML, Buller Electricity's RAMM database and processes was conducted at the request of Meridian Energy (**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.

BDC is responsible for streetlights within the Buller region connected to Network Tasman, Buller Electricity, and the Westpower Network. The streetlights as follows per network:

- **ElectroNet** records BDC lights connected to the Westpower Network in Inangahua, Reefton, Blacks Point, Ikamatua, Manwherawaiti and Punakaiki in their Arc GIS database.
- **Network Tasman** records nine lights at Springs Junction. These are recorded in the BDC RAMM database.
- **Buller Electricity** records the unmetered BDC lights in the BDC RAMM database. The remainder of the streetlights on the Buller Electricity network are on metered ICPs.

The ElectroNet database has been assessed in its own audit report which will be submitted separately. This report assesses the compliance for the unmetered load recorded in the RAMM database for the DUML load on the Buller and Network Tasman networks. This includes both council and a small number of NZTA lights.

Meridian's submissions for Buller Electricity are based on the unmetered daily kWh recorded on the registry for both ICPs. For ICP 0003970474BUE6B, the registry kWh figure is an historic value as no database has been supplied so far for reconciliation and has been found to be over reporting the volume resulting in an estimated 27,533 kWh over submission per annum. The database accuracy was assessed as part of this audit and found to be accurate. I recommend that BDC provide Meridian with a monthly wattage report from RAMM to be used for reconciliation.

The future risk rating of 12 indicates that the next audit be completed in 12 months time, and I agree with this recommendation. Two non-compliances were identified, and one recommendation is made. 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	Over submission of approx. 27,533 kWh per annum will be occurring due to historic registry value being used for submission.	Weak	Medium	6	Identified
Volume information accuracy	3.2	15.2 and 15.37B(c)	Over submission of approx. 27,533 kWh per annum will be occurring due to historic registry value being used for submission.	Weak	Medium	6	Identified
Future Risk Rating						12	

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

### RECOMMENDATIONS

Subject	Section	Description	Action
Deriving submission information	2.1	Buller DC to send Meridian a monthly wattage report from RAMM.	We will arrange this with Buller DC ASAP

### 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**

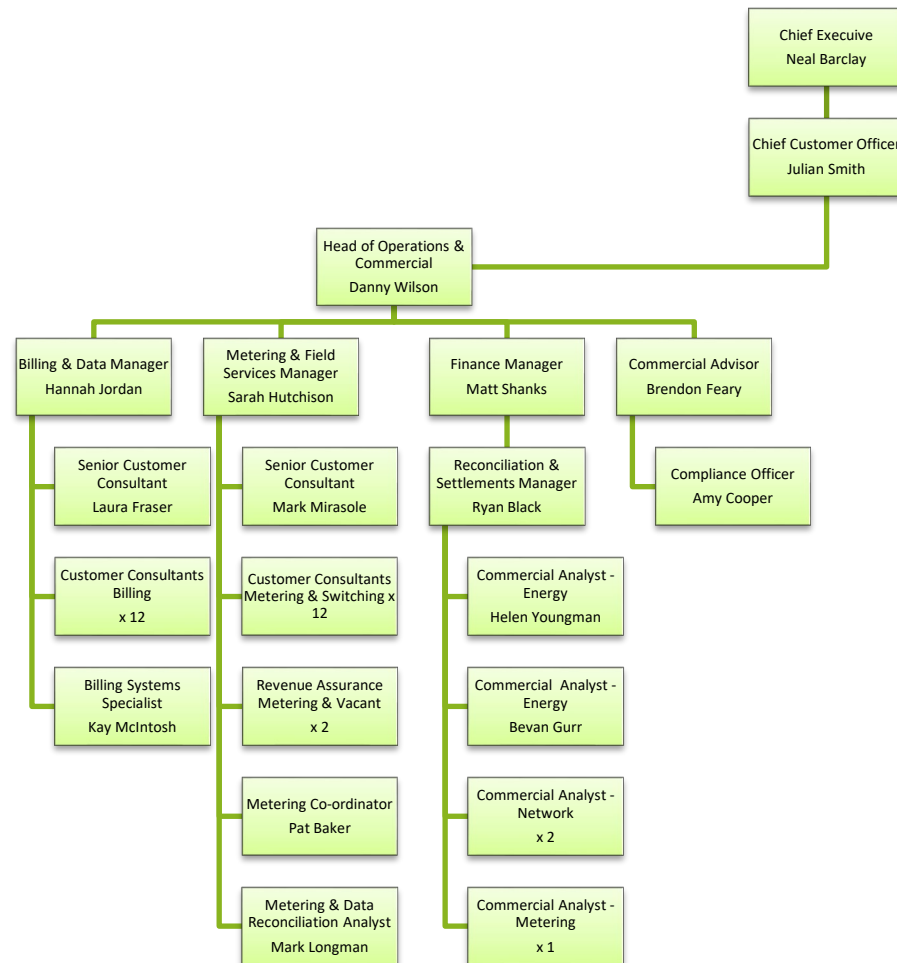
Section 11 of the Electricity Industry Act provides for the Electricity Authority to exempt any participant from compliance with all or any of the clauses.

#### **Audit commentary**

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

## 1.2. Structure of Organisation

Meridian provided a copy of their organisational structure:



### 1.3. Persons involved in this audit

Auditor:

Name	Title
Rebecca Elliot	Lead Auditor
Debbie Anderson	Supporting Auditor

Other personnel assisting in this audit were:

Name	Title	Company
Kim McLaughlin	Administrator	Buller Electricity Limited
Martin Dobson	Coordinator Asset Planning	Buller District Council
Amy Cooper	Compliance Officer	Meridian
Helen Youngman	Energy Data Analyst	Meridian

### 1.4. Hardware and Software

The RAMM database used for the management of DUML is remotely hosted by RAMM Software Ltd.

BDC confirmed that 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)
0003970474BUE6B	DUML Streetlights	ORO1102	55	5,176
0000090008NT5BE	BULLER CC STREETLIGHTING MURCHISON GXP	MCH0111	9	1,427
TOTAL			64	6,603

## 1.7. Authorisation Received

All information was provided directly by Meridian, BDC and Buller Electricity.

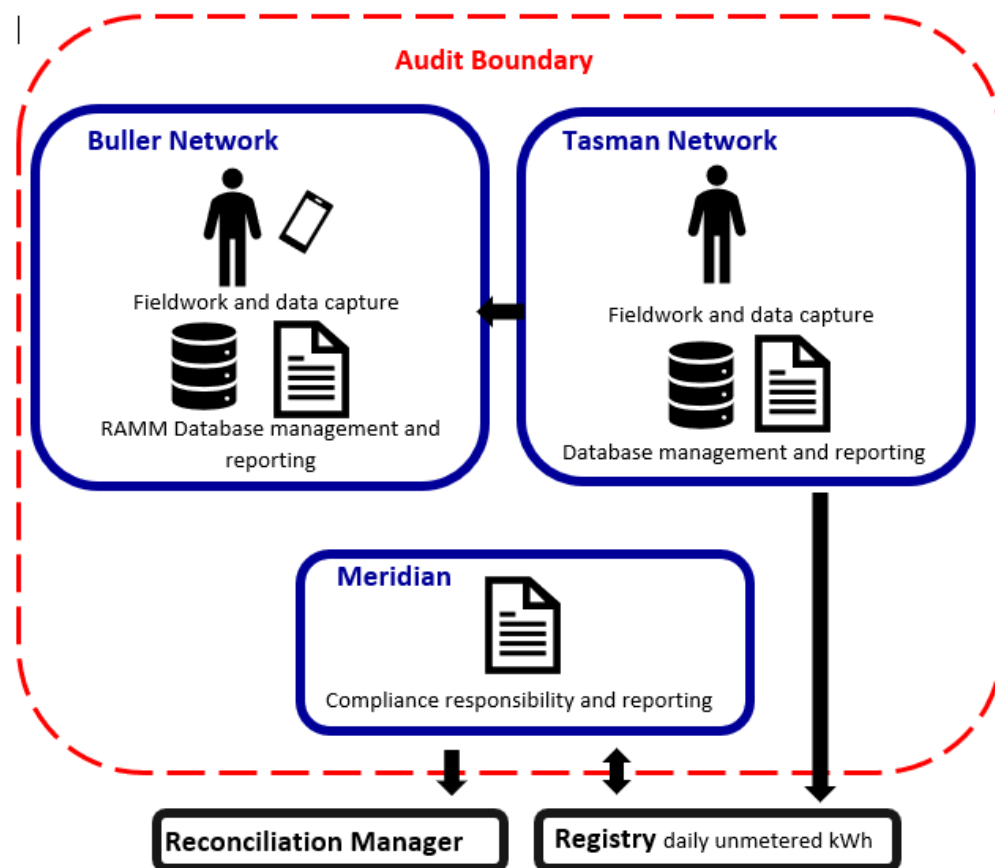
## 1.8. Scope of Audit

BDC is responsible for streetlights within the Buller region connected to Network Tasman, Buller Electricity and the Westpower Network. The streetlights are maintained in three separate databases:

- **ElectroNet** records BDC lights connected to the Westpower Network in Inangahua, Reefton, Blacks Point, Ikamatua, Manwherawaiti and Punakaiki in their Arc GIS database.
- **Network Tasman** records nine lights at Springs Junction. These are recorded in the BDC RAMM database.
- **Buller Electricity** records the unmetered BDC lights in the BDC RAMM database. The remainder of the streetlights on the Buller Electricity network are on metered ICPs.

The ElectroNet database has been assessed in its own audit report which will be submitted separately. This report assesses the compliance for the unmetered load recorded in the RAMM database for the DUML load on the Buller and Network Tasman networks. This includes both council and a small number of NZTA lights. Meridian's submission is based on the unmetered daily kWh recorded on the registry for both ICPs.

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 current 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 the 55 unmetered load items recorded in the RAMM database for ICP 0003970474BUE6B, on 14 November 2018. The lights on ICP 0000090008NT5BE were checked in the last audit report and found to be compliant and no changes have been made since.

### 1.9. Summary of previous audit

Meridian provided a copy of the last audit report undertaken by Tara Gannon of Veritek Limited in May 2018. The previous audit was undertaken for all the databases associated with BDC. The current status of the non-compliances found in the last audit in relation to the BDC RAMM database are detailed below:

### Table of Non-Compliance

Subject	Section	Clause	Non-Compliance	Status
Distributed unmetered load audits	1.10	16A.26 and 17.295F	The Buller Electricity database was not provided and could not be fully audited.	Cleared
Deriving submission information	2.1	11(1) of Schedule 15.3	The ElectroNet and Buller Electricity databases contain some incorrect and missing information. The Buller Electricity database is not used to create submission information.	N/A Still existing
ICP identifier and items of load	2.2	11(2)(a) and (aa) of Schedule 15.3	The Buller Electricity database has some missing and incorrect ICP numbers.	Cleared
Location of each item of load	2.3	11(2)(b) of Schedule 15.3	The Buller Electricity database does not contain adequate location information for all items of load.	Cleared
Description and capacity of load	2.4	11(2)(c) and (d) of Schedule 15.3	One item of load in the ElectroNet database does not have a light type or wattage recorded. Some items of load in the Buller Electricity database do not have complete and accurate description and load information recorded.	N/A Cleared
All load recorded in database	2.5	Clause 11(2A) of Schedule 15.3	The Buller Electricity database was not provided, and accuracy could not be assessed.	Cleared
Database accuracy	3.1	15.2 and 15.37B(b)	The ElectroNet and Buller Electricity databases contain some incorrect and missing information.	N/A
Volume information accuracy	3.2	15.2 and 15.37B(c)	The ElectroNet and Buller Electricity databases contain some incorrect and missing information. The Buller Electricity database is not used to create submission information.	N/A Still existing

## RECOMMENDATIONS

Subject	Section	Description	Status
Deriving submission information	2.1	Once the accuracy of the Buller Electricity database is confirmed, monthly reports from the database should be provided and used for submission.	Cleared
Tracking of load changes	2.6	Ensure that all database changes are processed prior to providing database reports to Meridian.	Cleared

### 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 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 and the application of profiles was checked. The database was checked for accuracy.

#### Audit commentary

Meridian reconciles this DUML load using the RPS profile and the daily unmetered figures for both ICPs. I checked the values being submitted and confirmed the calculations are correct.

BDC have worked with Buller Electricity during the audit period to bring the RAMM database up to date so that it can be used for submission. A check in the field confirmed that the database was accurate. The Network Tasman ICP items of load have been added to the RAMM database. The daily kWh figure used by Meridian was confirmed to be correct in the last audit and there have been no changes made to these lights since the last audit.

The database has 55 items of load associated with ICP 0003970474BUE6B with a total load of 5.176kW. This is significantly less than the current 134kWh per day figure recorded in the registry. This was last updated in 2008. I have calculated the estimated annualised difference below:

RAMM vs registry daily kWh	Annual kWh
RAMM	22,107
Registry	49,640
Estimated Annual kWh difference	-27,533

This is recorded as non-compliance below.

Compliance is confirmed.

I recommend that a monthly report is sent from Buller DC to Meridian to be used for submission.

Recommendation	Description	Audited party comment	Remedial action
<b>Regarding:</b> Clause 11(1) of schedule 15.3	Buller DC to send Meridian a monthly wattage report from RAMM.	We will arrange this with Buller DC ASAP	Identified

#### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 2.1 With: Clause 11(1) of Schedule 15.3  From: 15-May-18 To: 14-Nov-18	Over submission of approx. 27,533 kWh per annum will be occurring due to historic registry value being used for submission.  Potential impact: Medium  Actual impact: Medium  Audit history: Once  Controls: Weak  Breach risk rating: 6		
Audit risk rating	Rationale for audit risk rating		
<b>Medium</b>	The controls are rated as weak as no database has been used but note that with the RAMM database being used the control rating will improve.  The impact is assessed to be medium, based on the kWh differences described above.		
Actions taken to resolve the issue		Completion date	Remedial action status
We will arrange for Buller DC to send us a monthly snapshot of the RAMM database and use this to calculate submission volumes moving forward.		31 Dec 2018	Identified
We will conduct revisions of historic submission volumes as required by the Code		Ongoing	
Preventative actions taken to ensure no further issues will occur		Completion date	

## 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 the correct ICP was recorded against each item of load.

### Audit commentary

All items of load have an ICP recorded against them.

### 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

The database contains fields for the road name and GPS coordinates which are populated for all items of load.

#### 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 and that each item of load had a value recorded in these fields.

#### Audit commentary

The RAMM database has fields for make, model and wattage. All of these fields are populated for each item of load. The wattage field is populated with the total wattage.

#### 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

The lights on the Network Tasman ICP 0000090008NT5BE were checked in the last audit report and found to be compliant and no changes have been made since. The field audit was undertaken of the entire unmetered load for Buller Electricity network of 55 items of load on 14<sup>th</sup> November 2018.

## Audit commentary

The field audit findings are detailed in the table below:

Street/Area	Database Count	Field Count	Lamp no. difference	No of incorrect lamp wattage	Comments
<b>Cains Road &amp; SH67</b>					
CAINS RD (654)	1	1			
SIDE RD (1062)	1	1			
SH 67 GRANITY / TOREA ST (1093)	1	1			
NZTA - Birchfield	4	4			
<b>Cape Foulwind</b>					
CAPE FOULWIND RD (521)	2	2			
<b>Carters beach</b>					
MARTIN PL (850)	2	2			
NZTA - Carters Beach	1	1			
<b>Charleston</b>					
POWELL PL (822)	1	1			
PRINCES ST (847)	1	1			
NZTA - SH6	4	4			
NZTA - Rotten	1	1			
NZTA - Barnicoat	1	1			
NZTA - Saunders	1	1			
<b>Denniston</b>					
BURNETTS FACE RD (509)	3	3			
<b>Karamea</b>					
KARAMEA HIGHWAY (500)	2	2			
OPARARA RD (619)	1	1			
WAVERLEY ST (801)	1	1			
<b>Millerton</b>					
CALLIOPE ST (NOW MILLERTON TK #545) (501)	2	2			
<b>Seddonville</b>					
CHARMING CREEK RD (543)	1	1			
NZTA - Mokihinui	1	1			
<b>Waimangaroa</b>					
NEWCASTLE ST (838)	2	2			
SUNDERLAND ST (840)	2	2			
<b>Westport</b>					
KEW RD (1068)	2	2			
ADDERLEY ST (NORTH) (1015)	2	2			
CALEDONIAN RD (504)	2	2			
KEW RD (1068)	2	2			
MCKENNA RD (648)	1	1			
NINE MILE RD (523)	4	4			

Street/Area	Database Count	Field Count	Lamp no. difference	No of incorrect lamp wattage	Comments
REEDYS RD (666)	1	1			
STAFFORD ST (859)	3	3			
STEPHEN RD (506)	1	1			
THE ESPLANADE (904)	1	1			
<b>Grand Total</b>	<b>55</b>	<b>55</b>	<b>0</b>	<b>0</b>	

There were no items located that were missing from the RAMM database.

### 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 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 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<sup>th</sup> September 2012, the Authority sent a memo to Retailers and auditors advising that tracking of load changes at a daily level was not required as long as the database contained an audit trail. I have interpreted this to mean that the production of a monthly “snapshot” report 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 Buller Electricity.

Any new streetlight connections are metered.

Outage patrols are not conducted by BDC, notifications from the public are relied upon for light outages.

When maintenance is undertaken a check of the database is done and any corrections required are made at that time. Buller Electricity update RAMM as maintenance is performed.

The LED replacement project is in the scoping phase with the intention for it to be completed by June 2019. The installed LEDs will have built in CMS capability but BDC have no plans to implement a CMS at this time. Buller Electricity contractors have RAMM logins.

Private lights are on their own metered ICPs.

Christmas lights in the Buller district are connected to metered circuits. Currently they are only in the Palmerston Street area.

**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 database has a complete audit trail.

**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 field audit was undertaken of the 55 unmetered load items recorded in the RAMM database for ICP 0003970474BUE6B, on 14 November 2018. The lights on ICP 0000090008NT5BE were checked in the last audit report and found to be compliant and no changes have been made since.

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

##### Audit commentary

As detailed in **section 2.5**, the field audit confirmed the database to be 100% accurate.

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

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 the ICP has the correct profile and submission flag
- 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 RPS profile and the daily unmetered figures

BDC have worked with Buller Electricity during the audit period to bring the RAMM database up to date so that it can be used for submission. A check in the field confirmed that the database was accurate. The Network Tasman ICP items of load have been added to the RAMM database. The daily kWh figure used by Meridian was confirmed to be correct in the last audit and there have been no changes made to these lights since the last audit.

The database has 55 items of load associated with ICP 0003970474BUE6B with a total load of 5.176kW. This is significantly less than the current 134kWh per day figure recorded in the registry. This is discussed in **section 2.1**. I estimate over submission of 27,533 kWh per annum due to this. This is recorded as non-compliance below.

**Audit outcome**

Non-compliant

Non-compliance	Description		
Audit Ref: 3.2 With: Clause 15.2 and 15.37B(c)  From: 15-May-18 To: 14-Nov-18	Over submission of approx. 27,533 kWh per annum will be occurring due to historic registry value being used for submission.  Potential impact: Medium  Actual impact: Medium  Audit history: Once  Controls: Weak  Breach risk rating: 6		
Audit risk rating	Rationale for audit risk rating		
<b>Medium</b>	The controls are rated as weak as no database has been used but note that with the RAMM database being used the control rating will improve.  The impact is assessed to be medium, based on the kWh differences described above.		
Actions taken to resolve the issue		Completion date	Remedial action status
We will arrange for Buller DC to send us a monthly snapshot of the RAMM database and use this to calculate submission volumes moving forward.  We will conduct revisions of historic submission volumes as required by the Code		31 Dec 2018  Ongoing	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	

## CONCLUSION

BDC is responsible for streetlights within the Buller region connected to Network Tasman, Buller Electricity, and the Westpower Network. The streetlights as follows per network:

- **ElectroNet** records BDC lights connected to the Westpower Network in Inangahua, Reefton, Blacks Point, Ikamatua, Manwherawaiti and Punakaiki in their Arc GIS database.
- **Network Tasman** records nine lights at Springs Junction. These are recorded in the BDC RAMM database.
- **Buller Electricity** records the unmetered BDC lights in the BDC RAMM database. The remainder of the streetlights on the Buller Electricity network are on metered ICPs.

The ElectroNet database has been assessed in its own audit report which will be submitted separately. This report assesses the compliance for the unmetered load recorded in the RAMM database for the DUML load on the Buller and Network Tasman networks. This includes both council and a small number of NZTA lights.

Meridian's submissions for Buller Electricity are based on the unmetered daily kWh recorded on the registry for both ICPs. For ICP 0003970474BUE6B, the registry kWh figure is an historic value as no database has been supplied so far for reconciliation. BDC have updated the RAMM database in conjunction with Buller Electricity and the database accuracy was assessed as part of this audit and found to be accurate. The database has 55 items of load associated with ICP 0003970474BUE6B with a total load of 5.176kW. This is significantly less than the current 134kWh per day figure recorded in the registry. I have estimated 27,533 kWh over submission per annum. I recommend that BDC provide Meridian with a monthly wattage report from RAMM to be used for reconciliation.

The future risk rating of 12 indicates that the next audit be completed in 12 months time, and I agree with this recommendation. Two non-compliances were identified, and one recommendation is made. .

## PARTICIPANT RESPONSE

This audit has been reviewed by Meridian and their comments are recorded in the body of the report. No further comments were provided.