

ELECTRICITY INDUSTRY PARTICIPATION CODE  
DISTRIBUTED UNMETERED LOAD AUDIT REPORT



For

ONS DORP DUTCH RETIREMENT VILLAGE  
AND MERIDIAN ENERGY

Prepared by: Rebecca Elliot

Date audit commenced: 1 December 2023

Date audit report completed: 15 December 2023

Audit report due date: 01-Jun-18

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## EXECUTIVE SUMMARY

This audit of the **Ons Dorp Dutch Retirement Village (Ons Dorp)** Unmetered Streetlights 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.

This load is connected to multiple circuits and is therefore distributed unmetered load. Meridian applied for an exemption but as it was declined, therefore this audit was undertaken.

Meridian uses the registry daily kWh details to submit the volumes. They have been provided with a spreadsheet detailing the number and types of lights from Ons Dorp, but this has no location details. A full field audit was undertaken to confirm the lighting load and to add the location details. This found that all the unmetered streetlights have been changed to 29W Cree LED lights. I confirmed this with the Ons Dorp Maintenance Manager and Coll Electrical who carried out the work. The upgrade was undertaken approximately five years ago. The field audit also found less lights in the field than recorded in the spreadsheet, as lights that are connected to metered supplies were incorrectly included in the information sent to Meridian. These discrepancies will have resulted in an estimated 19,541 kWh of over submission over the last five years. Revisions are expected to be undertaken for the available 14-month period. This will be examined as part of Meridian's next Reconciliation Participant audit.

This audit found six non-compliances and no recommendations are made. The future risk rating of 27 indicates that the next audit be completed in three months. This is a very small unmetered load and therefore the impact to the market is minor. I have considered this in conjunction with the fact that submission revisions will be examined as part of Meridian's next Reconciliation Participant audit and Meridian's comments and recommend that the next audit be in 12 months time.

## AUDIT SUMMARY

### NON-COMPLIANCES

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Distributed unmetered load audits	1.10	17.295F	Audit of the village lights overdue.	Moderate	Low	2	Cleared
Deriving submission information	2.1	11(1) of Schedule 15.3	Over submission of an estimated 19,541 kWh due to the lights being changed to LED approximately five years ago and the incorrect inclusion of lights that are connected to metered supplies.	None	Low	5	Identified
Location of each item of load	2.3	11(2)(b) of Schedule 15.3	No location details recorded.	None	Low	5	Cleared
Audit trails	2.7	11(4) of Schedule 15.3	Changes to the spreadsheet do not indicate who has made the changes.	None	Low	5	Identified
Database accuracy	3.1	15.2 and 15.37B(b)	Over submission of an estimated 19,541 kWh due to the lights being changed to LED approximately five years ago and the incorrect inclusion of lights that are connected to metered supplies.	None	Low	5	Identified
Volume information accuracy	3.2	15.2 and 15.37B(c)	Over submission of an estimated 19,541 kWh due to the lights being changed to LED approximately five years ago and the incorrect inclusion of lights that are connected to metered supplies.	None	Low	5	Identified
Future Risk Rating						27	

<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**

<b>Subject</b>	<b>Section</b>	<b>Description</b>	<b>Recommendation</b>
		Nil	

**ISSUES**

<b>Subject</b>	<b>Section</b>	<b>Description</b>	<b>Issue</b>
		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

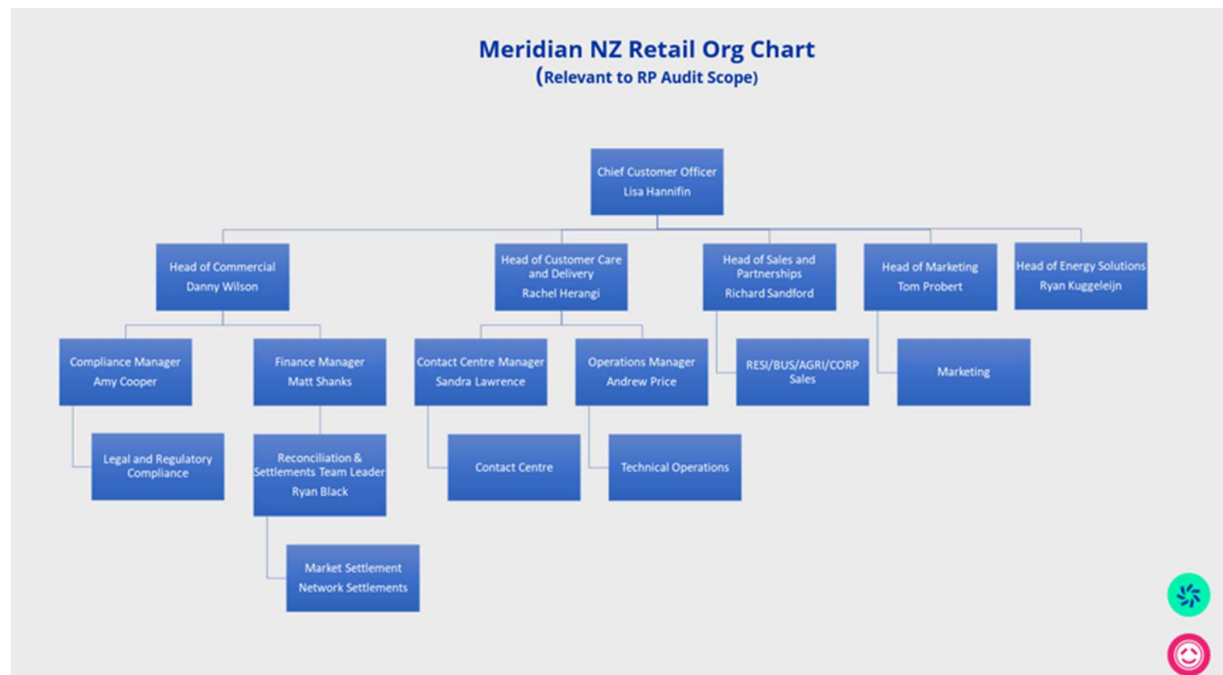
Section 11 of the Electricity Industry Act provides for the Electricity Authority to exempt any participant from compliance with all or any of the clauses.

#### 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	Auditor

Other personnel assisting in this audit were:

Name	Title	Company
Melanie Matthews	Quality and Compliance Advisor	Meridian Energy
Peter Van Ham	Maintenance officer	Ons Dorp Dutch Village
Richard	Manager	Coll Electrical

### 1.4. Hardware and Software

An excel spreadsheet of the streetlights is held at the Ons Dorp Dutch Village. The UML figure from this is recorded in the registry and is used to derive submission.

The spreadsheet is password protected and access to the directory where the spreadsheet is saved is restricted by way of user permissions. Meridian confirmed that this directory is backed up as part of the BAU processes in place.

### 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)
0000100115UN46C	UNM Streetlights	HEP0331	21	1,418
<b>Total</b>			<b>21</b>	<b>1,418</b>

### 1.7. Authorisation Received

All information was provided directly by Meridian, Ons Dorp Village and Coll Electrical.

## 1.8. Scope of Audit

This audit of the Ons Dorp Dutch Retirement Village (Ons Dorp) Unmetered Streetlights 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.

Meridian uses the registry daily kWh details to submit the volumes. They have been provided with a spreadsheet detailing the number and types of lights from Ons Dorp, but this has no location details. A full field audit was undertaken to confirm the lighting load and to add the location details. The village uses their own contractor for the maintenance of these lights.

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 the entire Ons Dorp Dutch Village spreadsheet, consisting of 21 items of load on 11 December 2023.

## 1.9. Summary of previous audit

This is the first audit of the Ons Dorp Dutch Village.

## 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 has requested Veritek to undertake this street lighting audit.

### Audit commentary

This DUML load has been with Meridian since this requirement came into effect. They applied for an exemption, but this was declined, therefore the audit is overdue.

### Audit outcome

Non-compliant



Non-compliance	Description		
Audit Ref: 1.10 With: Clause 17.295F  From: 01-Jun-18 To: 01-Dec-23	Audit of the village lights overdue. Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	The controls are recorded as moderate overall as Meridian has robust processes in place to manage DUML audits.  The delay in getting this audit undertaken has had a minor impact on settlement as the over submission has been occurring for five years and would have been identified earlier if the audit had been undertaken earlier.		
Actions taken to resolve the issue		Completion date	Remedial action status
			Cleared
Preventative actions taken to ensure no further issues will occur		Completion date	
A database has been created for future audits.		Completed	

## 2. DUMML 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:*

- *DUMML 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 DUMML load using the UNM profile. The registry daily unmetered kWh details are used to submit the volumes.

Meridian have been provided with a spreadsheet detailing the number of lights and lamp wattage light by type from Ons Dorp, but this has no location details. The field audit found that all the lights have been changed to 29W Cree LED lights. I confirmed this with the Ons Dorp Maintenance Manager and Coll Electrical who carried out the work. The upgrade was undertaken approximately five years ago. The field audit also found less lights in the field than recorded in the spreadsheet, as lights that are connected to metered supplies were incorrectly included in the unmetered load. This is detailed in **section 3.1**. These discrepancies will have resulted in an estimated 19,451 kWh of over submission over the last five years.

#### Audit outcome

Non-compliant

Non-compliance	Description	
Audit Ref: 2.1 With: Clause 11(1) of Schedule 15.3  From: 01-Dec-18 To: 01-Dec-23	Over submission of an estimated 19,541 kWh due to the lights being changed to LED approximately five years ago and the incorrect inclusion of lights that are connected to metered supplies.  Potential impact: Low  Actual impact: Low  Audit history: None  Controls: None  Breach risk rating: 5	
Audit risk rating	Rationale for audit risk rating	
<b>Low</b>	The controls are recorded as none as there is no process in place to manage change.  The impact on settlement and participants is assessed to be minor when spread over five years, therefore the audit risk rating is low.	
Actions taken to resolve the issue	Completion date	Remedial action status
A correct database has since been created for future audits. Meridian has revised the submission, and it will be amended in Februarys R14 reconciliation.	Completed 1/3/2024	Identified
Preventative actions taken to ensure no further issues will occur	Completion date	
Meridian will maintain the database and will update accordingly when notified by the Village of any changes.	Ongoing	

## 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 spreadsheet was checked to confirm an ICP was recorded against each item of load.

### Audit commentary

All items of load have an ICP recorded against them.

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

#### Audit commentary

The spreadsheet has no light locations recorded. This is recorded as non-compliance below. This has been captured as part of this field audit and provided to Meridian; therefore, I have cleared the non-compliance.

#### Audit outcome

Non-compliant

Non-compliance	Description	
Audit Ref: 2.3 With: Clause 11(2)(b) of Schedule 15.3 From: 01-Dec-17 To: 01-Dec-23	No location details recorded. Potential impact: Low Actual impact: Low Audit history: None Controls: None Breach risk rating: 5	
Audit risk rating	Rationale for audit risk rating	
<b>Low</b>	These details were missing from the spreadsheet provided and there is no process in place to capture this, hence controls are recorded as none. The audit risk rating is assessed to be none as these have now been captured using GPS co-ordinates. This is recorded as low as none is not an option.	
Actions taken to resolve the issue		Completion date
A correct database has since been created for future audits.		Completed
Preventative actions taken to ensure no further issues will occur		Completion date
Meridian will maintain the database and will update accordingly when notified by the Village of any changes.		Ongoing
		Cleared

#### 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 spreadsheet 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 spreadsheet contains a Lamp Description, Model, Gear Wattage and Lamp 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 field audit was undertaken of the entire load of 21 items of load.

##### **Audit commentary**

No additional lights were found.

##### **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 spreadsheet was examined.

##### **Audit commentary**

The spreadsheet has an “Applicable date from and to” fields.

### 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 spreadsheet was checked for audit trails.

### Audit commentary

Changes can be tracked but there is no record to indicate who has made the changes.

### Audit outcome

Non-compliant

Non-compliance	Description	
Audit Ref: 2.7 With: Clause 11(4) of Schedule 15.3  From: 01-Jun-17 To: 01-Dec-23	Changes to the spreadsheet do not indicate who has made the changes.  Potential impact: Low Actual impact: Low Audit history: None Controls: None Breach risk rating: 5	
Audit risk rating	Rationale for audit risk rating	
<b>Low</b>	There is no audit trail in the spreadsheet to indicate who has made changes so the controls are rated as none.  The audit risk rating is assessed to be low as few changes are expected for this lighting load.	
Actions taken to resolve the issue	Completion date	Remedial action status
A correct database has since been created for future audits.	Completed	Identified
Preventative actions taken to ensure no further issues will occur	Completion date	
Meridian will maintain the database and will update accordingly when notified by the Village of any changes.	Ongoing	

### 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**

A 100% field audit was undertaken of the database.

Wattages were checked for alignment with the published standardised wattage table produced by the Electricity Authority or against the LED light specification provided.

##### **Audit commentary**

The spreadsheet provided recorded 21 items of load. The field audit found 23 lights. Five of these were confirmed to be connected to the relevant building's metered supply making the number of unmetered streetlights a total of 18. All the unmetered streetlights have been changed to LED. I confirmed with the Maintenance Manager that this work was undertaken approximately five years ago. The lights fitted were confirmed with Coll Electrical to be Cree XSP1-T3M, with a total wattage value of 29W. These discrepancies will have resulted in an estimated 19,451 kWh of over submission over the last five years.

##### **Audit outcome**

Non-compliant

Non-compliance	Description	
Audit Ref: 3.1 With: Clause 15.2 and 15.37B(b)  From: 01-Jun-17 To: 01-Dec-23	Over submission of an estimated 19,541 kWh due to the lights being changed to LED five years ago and the incorrect inclusion of lights that are connected to metered supplies.  Potential impact: Low  Actual impact: Low  Audit history: None  Controls: None  Breach risk rating: 5	
Audit risk rating	Rationale for audit risk rating	
<b>Low</b>	The controls are recorded as none as there is no process in maintain the accuracy of the database.  The impact on settlement and participants is assessed to be minor when spread over five years, therefore the audit risk rating is low.	
Actions taken to resolve the issue	Completion date	Remedial action status
A correct database has since been created for future audits.  Meridian has revised the submission, and it will be amended in Februarys R14 reconciliation.	Completed  1/3/2024	Identified
Preventative actions taken to ensure no further issues will occur	Completion date	
Meridian will maintain the database and will update accordingly when notified by the Village of any changes.	Ongoing	

### 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 registry daily unmetered kWh details are used to submit the volumes.

Meridian have been provided with a spreadsheet detailing the number of lights and lamp wattage light by type from Ons Dorp, but this has no location details. The field audit found that all the lights have been changed to 29W Cree LED lights. I confirmed this with the Ons Dorp Maintenance Manager and Coll Electrical who carried out the work. The upgrade was undertaken approximately five years ago. The field audit also found less lights in the field than recorded in the spreadsheet, as lights that are connected to metered supplies were incorrectly included in the unmetered load. This is detailed in **section 3.1**. These discrepancies will have resulted in an estimated 19,451 kWh of over submission over the last five years.

### Audit outcome

Non-compliant

Non-compliance	Description	
Audit Ref: 3.2 With: Clause 15.2 and 15.37B(c)  From: 01-Jun-17 To: 01-Dec-23	Over submission of an estimated 19,541 kWh due to the lights being changed to LED approximately five years ago and the incorrect inclusion of lights that are connected to metered supplies.  Potential impact: Low  Actual impact: Low  Audit history: None  Controls: None  Breach risk rating: 5	
Audit risk rating	Rationale for audit risk rating	
<b>Low</b>	The controls are recorded as none as there is no process in place to manage change.  The impact on settlement and participants is assessed to be minor when spread over five years, therefore the audit risk rating is low.	
Actions taken to resolve the issue	Completion date	Remedial action status
A correct database has since been created for future audits. Meridian has revised the submission, and it will be amended in Februarys R14 reconciliation.	Completed 1/3/2024	Identified
Preventative actions taken to ensure no further issues will occur	Completion date	
Meridian will maintain the database and will update accordingly when notified by the Village of any changes.	Ongoing	

## CONCLUSION

This is the first audit of the Ons Dorp Dutch Retirement Village Unmetered Streetlights.

This load is connected to multiple circuits and is therefore distributed unmetered load. Meridian applied for an exemption but as it was declined, therefore this audit was undertaken.

Meridian uses the registry daily kWh details to submit the volumes. They have been provided with a spreadsheet detailing the number and types of lights from Ons Dorp, but this has no location details. A full field audit was undertaken to confirm the lighting load and to add the location details. This found that all the unmetered streetlights have been changed to LED. I confirmed with the Maintenance Manager that this work was undertaken approximately five years ago. The field audit also found less lights in the field than recorded in the spreadsheet, as lights that are connected to metered supplies were incorrectly included in the information sent to Meridian. These discrepancies will have resulted in an estimated 19,541 kWh of over submission over the last five years. Revisions are expected to be undertaken for the available 14-month period. This will be examined as part of Meridian's next Reconciliation Participant audit.

This audit found six non-compliances and no recommendations are made. The future risk rating of 27 indicates that the next audit be completed in three months. This is a very small unmetered load and therefore the impact to the market is minor. I have considered this in conjunction with the fact that submission revisions will be examined as part of Meridian's next Reconciliation Participant audit and Meridian's comments and recommend that the next audit be in 12 months time.

## PARTICIPANT RESPONSE

Meridian has reviewed this report, and their comments are contained in the report. No further comments were provided.