ELECTRICITY INDUSTRY PARTICIPATION CODE
DISTRIBUTED UNMETERED LOAD AUDIT REPORT

Provera

For

ONE NZ
AND
MERIDIAN ENERGY
NZBN:9429037696863

Prepared by: Brett Piskulic and Tara Gannon

Date audit commenced: 16 February 2024

Date audit report completed: 20 May 2024

Audit report due date: 21-May-24

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EXECUTIVE SUMMARY

This audit covers the **One NZ** DUML database and processes and was conducted at the request of **Meridian NZ 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 is the first audit of the One NZ DUML since Meridian became the trader on 1 November 2023.

The database records the wattages and daily kWh for the items of load based on primary and secondary measurements taken in the field at the primary or secondary sides of the transformers supplying the equipment. Some of the equipment does not have primary values recorded and an adjustment factor is required to be added to the database values to ensure the correct wattage is used for submission. The adjustment factor of 72% was determined by conducting primary and secondary measurements of a sample of 36 items of loads to determine the correct wattages. The previous trader applied this factor to the database values and updated the registry daily kWh values accordingly. Meridian was not aware of the need to apply the adjustment factor and updated the registry daily kWh values based on the raw daily kWh values from the database when it became the trader. I checked the latest submission information for March 2024 against the database values and found a daily kWh difference of 1,405 kWh per day which equals 512,664 kWh of under submission per annum. On 2 May 2024 Meridian corrected the registry daily kWh figures and backdated the changes to 1 November 2023. The submission differences will be corrected by subsequent revision submissions.

I have recommended that an additional field is added to the database which clearly records the primary daily kWh figure to be used by the trader for each item of load. This field should be populated with either the measured primary value or derived value after application of the 72% adjustment factor.

The future risk rating indicates that the next audit be completed in 18 months. I have considered this in conjunction with Meridian's comments and I agree with this recommendation.

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 512,664 kWh per annum due to incorrect daily kWh values recorded in the registry for 12 ICPs.	Strong	High	3	Identified
Volume information accuracy	3.2	15.2 and 15.37B(c)	Under submission of 512,664 kWh per annum due to incorrect daily kWh values recorded in the registry for 12 ICPs.	Strong	High	3	Identified
Future Risk Rating						6	

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	Recommendation
Deriving submission information	2.1	Add an additional field to the database which clearly records the primary daily kWh figure to be used by the trader for each item of load. This field should be populated with either the measured primary value or derived value after application of the 72% adjustment factor.
Database accuracy	3.1	Investigation is conducted to determine and update the database with the individual detail of all items of load at ICPs 0001261460UN08E, 0001409085UN545, 0007106261RN1C3, 0007145198RN5F3, and 0007146145RN50A.

ISSUES

Subject	Section	Description	Issue
		Nil	

1. ADMINISTRATIVE

1.1. Exemptions from Obligations to Comply with Code

Code reference

Section 11 of Electricity Industry Act 2010.

Code related audit information

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

Audit observation

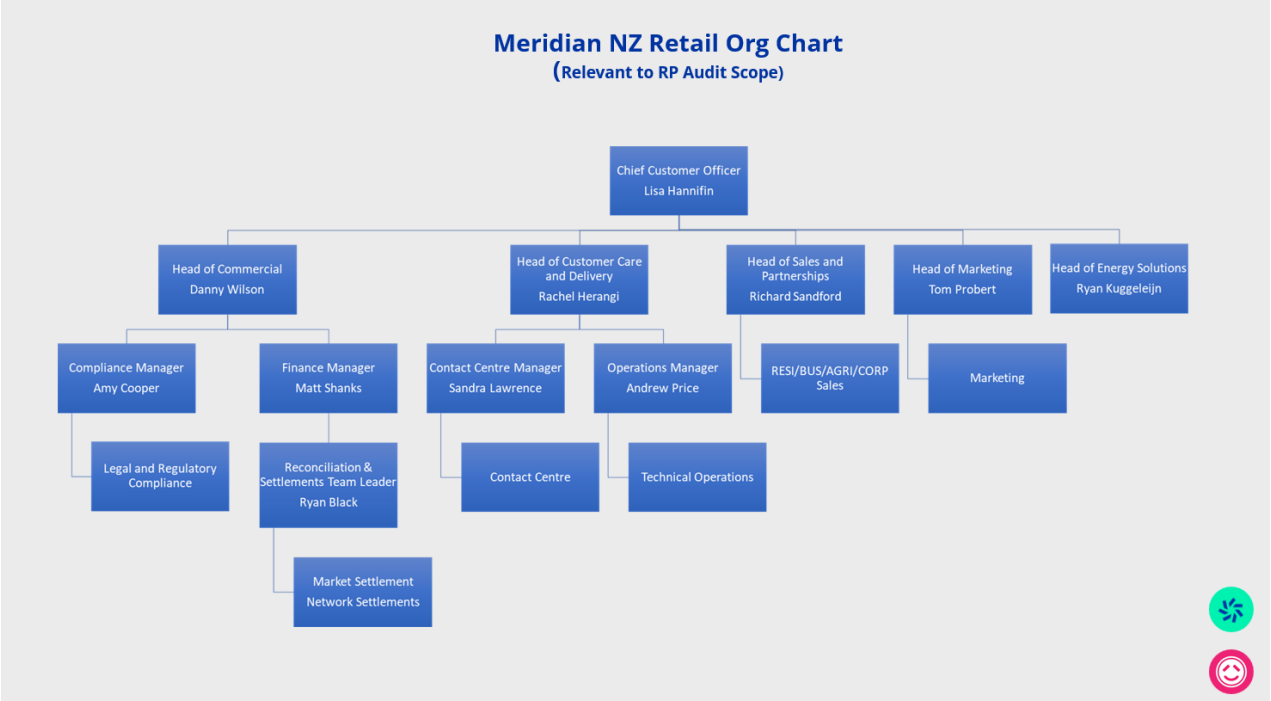
The Electricity Authority's website was reviewed to identify any exemptions relevant to the scope of this audit.

Audit commentary

Meridian has no exemptions in place in relation to the ICPs covered by this audit report.

1.2. Structure of Organisation

Meridian provided an organisational structure:



1.3. Persons involved in this audit

Auditor:

Name	Role	Company
Brett Piskulic	Auditor	Provera
Tara Gannon	Supporting Auditor	Provera

Other personnel assisting in this audit were:

Name	Title	Company
Melanie Matthews	Quality and Compliance Advisor	Meridian Energy Limited
Jordon Kane	Energy Data Analyst	Meridian Energy Limited
Sarah Morris	Client Account Specialist	Smart Power Limited
Kiran Lakhbir	Electricity Coordinator Facilities & Services DevOps	One NZ
Christian White	Access DevOPs Engineer Fixed Access Network	One NZ
Robert Tait	Senior Project Manager – W&I Property & Facilities	One NZ

1.4. Hardware and Software

Database

The streetlight data for One NZ is held in an excel spreadsheet. This is backed up in accordance with standard industry procedures. Access to the spreadsheet is restricted by way of user log into the computer drive.

Trader systems

Systems used by the trader 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)
0000161894CK3EF	VODAFONE DUML GXP CPK0331	CPK0331	UML	111	64,217
0000161895CKFAA	VODAFONE DUML GXP GFD0331	GFD0331	UML	60	32,940

ICP Number	Description	NSP	Profile	Number of items of load	Database wattage (watts)
0000161896CK36A	VODAFONE DUML GXP KWA0111	KWA0111	UML	10	5,035
0000161897CKF2F	VODAFONE DUML GXP HAY0331	HAY0331	UML	19	10,504
0000161898CK0F1	VODAFONE DUML GXP TKR0331	TKR0331	UML	42	21,263
0000161899CKCB4	VODAFONE DUML GXP UHT0331	UHT0331	UML	41	22,919
0000161900CK406	VODAFONE DUML GXP WIL0331	WIL0331	UML	42	24,270
0000164960CKCD6	VODAFONE DUML GXP CPK0111	CPK0111	UML	14	7,138
0000190118TR62B	VODAFONE DUML GXP MLG0331	MLG0331	UML	50	28,023
0001261460UN08E	VODAFONE BULK UNMETERED	WRD0331	UML	9	4,555
0001393839UN86B	VODAFONE DUML GXP HAY0111	HAY0111	UML	21	10,447
0001409085UN545	VODAFONE BULK UNMETERED	ALB0331	UML	11	5,452
0007106261RN1C3	Clear Mux Box	ISL0661	UML	1	368
0007145198RN5F3	TSTC K352	ISL0661	UML	1	312
0007146145RN50A	TSTC K353	ISL0661	UML	1	273
0015723581ELA43	TELSTRACLEAR LTD	PRM0331	UML	94	54,315
1001146090UN1CE	VODAFONE DUML GXP MLG0111	MLG0111	UML	21	10,353
TOTAL				**548**	**302,384**

Two ICPs were identified during the audit that are currently recorded as standard unmetered load, 0007143499RN973 and 0007183309RND26. Meridian is investigating to determine if these ICPs should be added to the DUML database.

1.7. Authorisation Received

All information was provided directly by Meridian, Smart Power and One NZ.

1.8. Scope of Audit

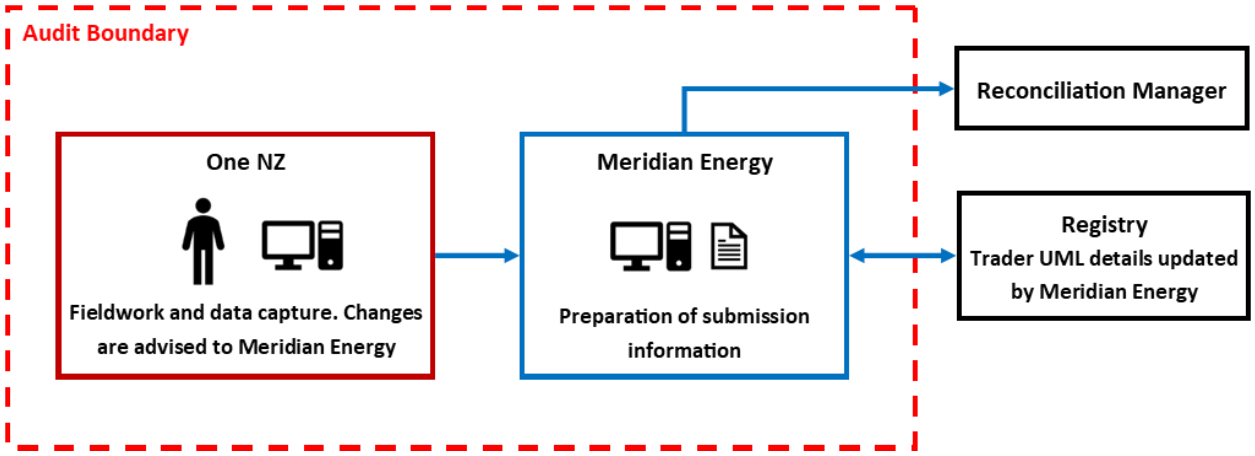
This audit covers the One NZ DUML database and processes and was conducted at the request of Meridian in accordance with clause 15.37B. The purpose of this audit is to verify that the volume

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 spreadsheet is maintained by One NZ, and it is expected that an updated version is sent to Meridian each month including details of any changes made during the month. Meridian then updates the daily kWh value on the registry to reflect any changes that have occurred. Smart Power Limited provide an energy management service to One NZ and provided a copy of the spreadsheet to Provera on behalf of One NZ for this audit.

The DUML load is settled using the UML profile from the daily kWh values on the registry which are derived from the database load and on hours of 24 hours per day.

The scope of the audit encompasses the collection, security, and accuracy of the data, including the preparation of submission information based on the database reporting. The diagram below shows the audit boundary for clarity.



A field audit of 125 items of load was carried out 26 to 27 April 2024 and 8 May 2024.

1.9. Summary of previous audit

The previous audit was undertaken in April 2023 by Bernie Cross of Veritek limited. The current status of those findings is detailed in the table below:

Table of Non-compliance

Subject	Section	Clause	Non-Compliance	Status
Deriving submission information	2.1	11(1) of Schedule 15.3	Over submission of 89,805 kWh per annum due to incorrect daily kWh values derived for Alpha units where primary measurements are available in the database. Incorrect submission for Auckland and Christchurch ICPs.	Still existing for incorrect submission
Database accuracy	3.1	15.2 and 15.37B(b)	Over submission of 89,805 kWh per annum due to incorrect daily kWh values derived for Alpha units where primary measurements are available in the database Incorrect submission for Auckland and Christchurch ICPs.	Cleared for database accuracy

Subject	Section	Clause	Non-Compliance	Status
Volume information accuracy	3.2	15.2 and 15.37B(c)	Over submission of 89,805 kWh per annum due to incorrect daily kWh values derived for Alpha units where primary measurements are available in the database. Incorrect submission for Auckland and Christchurch ICPs.	Still existing for incorrect submission

Recommendations

Subject	Section	Recommendation	Status
Deriving submission information	2.1	Conduct primary measurements to confirm the accuracy of the daily kWh figures in Christchurch and Auckland.	New recommendation made regarding these ICPs

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 Provera to undertake this distributed unmetered load audit.

Audit commentary

The completion of this audit report confirms compliance with this clause.

Audit outcome

Compliant

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

Submission process and accuracy

Meridian reconciles this DUML load using the UML profile. I checked the accuracy of the submission information from the database with the registry, which is used as the source data to create the submission information, to confirm the volume was calculated correctly. I compared the database provided to the submission values for March 2024. The submission values used were calculated from the registry daily kWh figures as updated by Meridian on 1 November 2023 when they became the trader for this DUML load. The registry values used were based on the raw daily kWh figures populated in the database. As confirmed in the database accuracy section below, the raw daily kWh figure from the database requires the application of a scaling factor for 12 ICPs, therefore the submission figures used for March 2024 were incorrect. The daily kWh difference is 1,405 kWh per day which equals 512,664 kWh of under submission per annum. Meridian corrected the registry daily kWh figures and backdated the changes to 1 November 2023 on 2 May 2024. The submission differences will be corrected by subsequent revision submissions.

There are five ICPs which do not have the individual detail for each item of load recorded in the database. The daily kWh recorded in the database for these five ICPs matches the daily kWh recorded in the registry, but I was unable to confirm the accuracy of the database.

ICP	Database daily kWh	Registry daily kWh
0001261460UN08E	57.6	57.6
0001409085UN545	57.6	57.6
0007106261RN1C3	8.4	8.4
0007145198RN5F3	9.38	9.38
0007146145RN50A	7.73	7.73

I have recommended in **section 3.1** that the further investigation is conducted to determine and update the database with the individual detail of all items of load at these five ICPs.

Database accuracy

One NZ has provided correct wattages for all 96 XM3 cabinets and they conducted primary and secondary measurements of a sample of 36 of the 428 Alpha pedestals in 2022. Some of the Alpha units

are mounted on overhead poles, but the technology is the same. These results show that the secondary results are 72% of the primary results.

In previous audits it was recommended that the trader use the results of the sample of 36 Alpha Pedestals and apply a 72% factor (by dividing the secondary daily kWh by 0.72) to all (except for the XM3 fittings which can be used without adjustment as measurements have been taken) of the daily kWh figures currently derived from the secondary side measurements.

The previous trader had revised the daily kWh values on the registry for 12 ICPs to reflect this scaling factor, however this adjustment was applied to all Alpha units, including the sample of 36 Alpha units where the actual primary measurements were recorded, resulting in an over submission of volume. On 2 May 2024 Meridian corrected the registry daily kWh figures with the 72% factor applied only to the Alpha units which do not have primary wattages recorded and backdated the changes to 1 November 2023.

The table below shows the results of my calculations which are based on the measurements provided by One NZ.

ICP	XM3 daily kWh	Daily kWh Alpha cabinets - Primary measurements	Daily kWh Alpha cabinets - Secondary measurements	Corrected daily kWh (divided by 0.72)	Calculated daily kWh per ICP	Daily kWh from the registry updated Nov 2023	Current daily registry kWh updated 2 May 2024
0000161894CK3EF	225.23	34.7	912.8	1,267.78	1,527.71	1,172.7	1,527.7
0000161895CKFAA	138.12	81.39	338.37	469.96	758.91	607.88	758.91
0000161896CK36A	9.17	0	80.4	111.67	120.84	89.57	120.84
0000161897CKF2F	51.03	17.21	127.56	177.17	245.41	195.8	245.41
0000161898CK0F1	66.91	9.08	310.17	430.79	497.03	379.13	497.03
0000161899CKCB4	139.1	81.7	214.18	297.47	518.27	434.99	518.27
0000161900CK406	136.12	7.52	315.59	438.32	584.77	461.25	584.77
0000164960CKCD6	28.27	0	102.99	143.04	171.31	131.26	171.31
0000190118TR62B	67.39	52.68	383.04	532.00	643.17	494.21	643.17
0001393839UN86B	59.82	0	137.46	190.92	250.74	197.27	250.74
0015723581ELA43	284.57	140.16	600.94	834.64	1,201.09	1,011.7	1,201.1
1001146090UN1CE	8.85	15.82	156.7	217.64	242.31	181.37	242.31
Total	**1,215**	**440**	**3,680**	**5,111**	**6,762**	**5,357**	**6,762**

The daily kWh difference for the March 2024 submission is 1,405 kWh per day which equals 512,664 kWh of under submission per annum. Meridian corrected the registry daily kWh figures and backdated the changes to 1 November 2023 on 2 May 2024. The submission differences will be corrected by subsequent revision submissions.

I recommend that an additional field is added to the database which clearly records the primary daily kWh figure to be used by the trader for each item of load. This field should be populated with either the measured primary value or derived value after application of the 72% adjustment factor.

Recommendation	Description	Audited party comment	Remedial action
Deriving submission information	Add an additional field to the database which clearly records the primary daily kWh figure to be used by the trader for each item of load. This field should be populated with either the measured primary value or derived value after application of the 72% adjustment factor.	Meridian advised One NZ of the recommendation. One NZ support the recommendation and are investigating on was to implement it.	Investigating

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.1 With: 11(1) of Schedule 15.3 From: 01-Nov-23 To: 02-May-24	Under submission of 512,664 kWh per annum due to incorrect daily kWh values recorded in the registry for 12 ICPs. Potential impact: High Actual impact: High Audit history: Twice Controls: Strong Breach risk rating: 3
Audit risk rating	**Rationale for audit risk rating**
High	The controls in place are rated as strong because Meridian has updated the registry to the correct daily kWh figures at the time of the audit. The impact is assessed to be high based on the under submission of 512,664 kWh per annum.
Actions taken to resolve the issue	**Completion date** / **Remedial action status**

Meridian confirms that changes made to the registry on 1 Nov 2023 were not reflected in the Meridian billing to One NZ Group Limited. The changes made to the registry were a change of the daily kWh loads without the application of the 72% adjustment factor. One NZ was not under billed for the 12 ICP's. The total daily kWh's invoiced were around 7006 kWh and unchanged from the submission to the registry on 1 Nov 2023 for a total of 5357 kWh's daily. If the lower kWh amounts were invoiced, Smart Power advised they would have highlighted this to the Meridian billing team then. With the correction of submission to the registry on 2 May 2024 for 6762 daily kWh, Meridian will back date and rebill One NZ and submit the correction of consumption.	2/06/2024	Identified
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 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 spreadsheet was checked to confirm an ICP an ICP is recorded for each item of load.

Audit commentary

The spreadsheet contains correct ICP identifiers.

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

Audit commentary

The spreadsheet contains the street address for each item of load, which is sufficient to locate them.

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 spreadsheet was checked to confirm that it contained fields for load type and wattage.

Audit commentary

The spreadsheet contains fields for primary voltage, primary current, secondary voltage, secondary current, wattage, daily kWh and a description of the type of load.

Audit outcome

Compliant

2.5. All load recorded in database (Clause 11(2A) of Schedule 15.3)

Code reference

Clause 11(2A) of Schedule 15.3

Code related audit information

The retailer must ensure that each item of DUML for which it is responsible is recorded in this database.

Audit observation

A field audit of 125 items of load was carried out 26 to 27 April 2024 and 8 May 2024.

Audit commentary

No discrepancies were identified during the field audit.

The database accuracy is discussed in **section 3.1**.

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 spreadsheets was examined.

Audit commentary

The spreadsheet contains a separate sheet for recording changes. One NZ advised that the voltage and current figures are re-checked when any changes to the load are conducted.

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

The spreadsheet includes a change log for each ICP which records the date of any change, action taken, person making the change and the details. This change log enables Meridian to be able to reflect changes to the daily kWh value on the registry at a daily level.

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

A field audit of 125 items of load was undertaken to confirm the accuracy of the spreadsheet. I checked the wattage calculations to ensure accuracy.

Audit commentary

Field Audit Findings

No discrepancies were identified during the field audit, confirming that the database is within the +/-5% accuracy threshold.

Change management process

Changes to the items of load are rare and are mostly due to maintenance or decommissioning of sites. Any changes made in the field are reported to One NZ by the technicians and the database is updated.

Database accuracy

One NZ has provided correct wattages for all 96 XM3 cabinets and they conducted primary and secondary measurements of a sample of 36 of the 428 Alpha pedestals in 2022. Some of the Alpha units are mounted on overhead poles, but the technology is the same. These results show that the secondary results are 72% of the primary results.

In previous audits it was recommended that the trader use the results of the sample of 36 Alpha Pedestals and apply a 72% factor (by dividing the secondary daily kWh by 0.72) to all (except for the XM3 fittings which can be used without adjustment as measurements have been taken) of the daily kWh figures currently derived from the secondary side measurements.

The previous trader had revised the daily kWh values on the registry for 12 ICPs to reflect this scaling factor, however this adjustment was applied to all Alpha units, including the sample of 36 Alpha units where the actual primary measurements were recorded, resulting in an over submission of volume. On 2 May 2024 Meridian corrected the registry daily kWh figures with the 72% factor applied only to the Alpha units which do not have primary wattages recorded and backdated the changes to 1 November 2023.

The table below shows the results of my calculations which are based on the measurements provided by One NZ.

ICP	XM3 daily kWh	Daily kWh Alpha cabinets - Primary measurements	Daily kWh Alpha cabinets - Secondary measurements	Corrected daily kWh (divided by 0.72)	Calculated daily kWh per ICP	Daily kWh from the registry updated Nov 2023	Current daily registry kWh updated 2 May 2024
0000161894CK3EF	225.23	34.7	912.8	1,267.78	1,527.71	1,172.7	1,527.7
0000161895CKFAA	138.12	81.39	338.37	469.96	758.91	607.88	758.91
0000161896CK36A	9.17	0	80.4	111.67	120.84	89.57	120.84
0000161897CKF2F	51.03	17.21	127.56	177.17	245.41	195.8	245.41
0000161898CK0F1	66.91	9.08	310.17	430.79	497.03	379.13	497.03
0000161899CKCB4	139.1	81.7	214.18	297.47	518.27	434.99	518.27
0000161900CK406	136.12	7.52	315.59	438.32	584.77	461.25	584.77
0000164960CKCD6	28.27	0	102.99	143.04	171.31	131.26	171.31
0000190118TR62B	67.39	52.68	383.04	532.00	643.17	494.21	643.17
0001393839UN86B	59.82	0	137.46	190.92	250.74	197.27	250.74
0015723581ELA43	284.57	140.16	600.94	834.64	1,201.09	1,011.7	1,201.1
1001146090UN1CE	8.85	15.82	156.7	217.64	242.31	181.37	242.31
Total	**1,215**	**440**	**3,680**	**5,111**	**6,762**	**5,357**	**6,762**

The daily kWh difference for the March 2024 submission is 1,405 kWh per day which equals 512,664 kWh of under submission per annum. Meridian corrected the registry daily kWh figures and backdated the changes to 1 November 2023 on 2 May 2024. The submission differences will be corrected by subsequent revision submissions.

My review of the wattage calculations has confirmed that the database contains accurate information which can be used to determine the daily consumption for the 12 ICPs detailed above if the 72% factor is correctly applied. I have recommended in **section 2.1** that an additional field is added to the database which clearly records the primary daily kWh figure to be used by the trader for each item of load.

There are five ICPs which do not have the individual detail for each item of load recorded in the database. The daily kWh recorded in the database for these five ICPs matches the daily kWh recorded in the registry, but I was unable to confirm the accuracy of the database.

ICP	Database daily kWh	Registry daily kWh
0001261460UN08E	57.6	57.6
0001409085UN545	57.6	57.6
0007106261RN1C3	8.4	8.4
0007145198RN5F3	9.38	9.38
0007146145RN50A	7.73	7.73

I recommend that further investigation is conducted to determine and update the database with the individual detail of all items of load at these five ICPs.

Recommendation	Description	Audited party comment	Remedial action
Database accuracy	Investigation is conducted to determine and update the database with the individual detail of all items of load at ICPs 0001261460UN08E, 0001409085UN545, 0007106261RN1C3, 0007145198RN5F3, and 0007146145RN50A.	Meridian advised One NZ of the recommendation. One NZ have advised that they will provide an updated database on a bi- monthly or quarterly basis to Meridian. Smart Power will monitor this to ensure delivered and to assist with One NZ's energy management and reporting.	Identified

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 process for calculation of consumption was examined and the application of profiles was checked. The database was checked for accuracy.

Audit commentary

Submission process and accuracy

Meridian reconciles this DUML load using the UML profile. I checked the accuracy of the submission information from the database with the registry, which is used as the source data to create the submission information, to confirm the volume was calculated correctly. I compared the database provided to the submission values for March 2024. The submission values used were calculated from the registry daily kWh figures as updated by Meridian on 1 November 2023 when they became the trader for this DUML load. The registry values used were based on the raw daily kWh figures populated in the database. As confirmed in the database accuracy section below, the raw daily kWh figure from the database requires the application of a scaling factor for 12 ICPs, therefore the submission figures used for March 2024 were incorrect. The daily kWh difference is 1,405 kWh per day which equals 512,664 kWh of under submission per annum. Meridian corrected the registry daily kWh figures and backdated the changes to 1 November 2023 on 2 May 2024. The submission differences will be corrected by subsequent revision submissions.

There are five ICPs which do not have the individual detail for each item of load recorded in the database. The daily kWh recorded in the database for these five ICPs matches the daily kWh recorded in the registry, but I was unable to confirm the accuracy of the database.

ICP	Database daily kWh	Registry daily kWh

0001261460UN08E	57.6	57.6
0001409085UN545	57.6	57.6
0007106261RN1C3	8.4	8.4
0007145198RN5F3	9.38	9.38
0007146145RN50A	7.73	7.73

I have recommended in **section 3.1** that the further investigation is conducted to determine and update the database with the individual detail of all items of load at these five ICPs.

Database accuracy

One NZ has provided correct wattages for all 96 XM3 cabinets and they conducted primary and secondary measurements of a sample of 36 of the 428 Alpha pedestals in 2022. Some of the Alpha units are mounted on overhead poles, but the technology is the same. These results show that the secondary results are 72% of the primary results.

In previous audits it was recommended that the trader use the results of the sample of 36 Alpha Pedestals and apply a 72% factor (by dividing the secondary daily kWh by 0.72) to all (except for the XM3 fittings which can be used without adjustment as measurements have been taken) of the daily kWh figures currently derived from the secondary side measurements.

The previous trader had revised the daily kWh values on the registry for 12 ICPs to reflect this scaling factor, however this adjustment was applied to all Alpha units, including the sample of 36 Alpha units where the actual primary measurements were recorded, resulting in an over submission of volume. On 2 May 2024 Meridian corrected the registry daily kWh figures with the 72% factor applied only to the Alpha units which do not have primary wattages recorded and backdated the changes to 1 November 2023.

The table below shows the results of my calculations which are based on the measurements provided by One NZ.

ICP	XM3 daily kWh	Daily kWh Alpha cabinets - Primary measurements	Daily kWh Alpha cabinets - Secondary measurements	Corrected daily kWh (divided by 0.72)	Calculated daily kWh per ICP	Daily kWh from the registry updated Nov 2023	Current daily registry kWh updated 2 May 2024
0000161894CK3EF	225.23	34.7	912.8	1,267.78	1,527.71	1,172.7	1,527.7
0000161895CKFAA	138.12	81.39	338.37	469.96	758.91	607.88	758.91
0000161896CK36A	9.17	0	80.4	111.67	120.84	89.57	120.84
0000161897CKF2F	51.03	17.21	127.56	177.17	245.41	195.8	245.41
0000161898CK0F1	66.91	9.08	310.17	430.79	497.03	379.13	497.03
0000161899CKCB4	139.1	81.7	214.18	297.47	518.27	434.99	518.27
0000161900CK406	136.12	7.52	315.59	438.32	584.77	461.25	584.77
0000164960CKCD6	28.27	0	102.99	143.04	171.31	131.26	171.31
0000190118TR62B	67.39	52.68	383.04	532.00	643.17	494.21	643.17
0001393839UN86B	59.82	0	137.46	190.92	250.74	197.27	250.74
0015723581ELA43	284.57	140.16	600.94	834.64	1,201.09	1,011.7	1,201.1

ICP	XM3 daily kWh	Daily kWh Alpha cabinets - Primary measurements	Daily kWh Alpha cabinets - Secondary measurements	Corrected daily kWh (divided by 0.72)	Calculated daily kWh per ICP	Daily kWh from the registry updated Nov 2023	Current daily registry kWh updated 2 May 2024
1001146090UN1CE	8.85	15.82	156.7	217.64	242.31	181.37	242.31
Total	**1,215**	**440**	**3,680**	**5,111**	**6,762**	**5,357**	**6,762**

The daily kWh difference for the March 2024 submission is 1,405 kWh per day which equals 512,664 kWh of under submission per annum. Meridian corrected the registry daily kWh figures and backdated the changes to 1 November 2023 on 2 May 2024. The submission differences will be corrected by subsequent revision submissions.

I have recommended in **section 2.1** that an additional field is added to the database which clearly records the primary daily kWh figure to be used by the trader for each item of load.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.2 With: 15.2 and 15.37B(c) From: 01-Nov-23 To: 02-May-24	Under submission of 512,664 kWh per annum due to incorrect daily kWh values recorded in the registry for 12 ICPs. Potential impact: High Actual impact: High Audit history: Twice Controls: Strong Breach risk rating: 3
Audit risk rating	**Rationale for audit risk rating**
High	The controls in place are rated as strong because Meridian has updated the registry to the correct daily kWh figures at the time of the audit. The impact is assessed to be high based on the under submission of 512,664 kWh per annum.
Actions taken to resolve the issue	**Completion date** / **Remedial action status**

Meridian confirms that changes made to the registry on 1 Nov 2023 were not reflected in the Meridian billing to One NZ Group Limited. The changes made to the registry were a change of the daily kWh loads without the application of the 72% adjustment factor. One NZ was not under billed for the 12 ICP's. The total daily kWh's invoiced were around 7006 kWh and unchanged from the submission to the registry on 1 Nov 2023 for a total of 5357 kWh's daily. If the lower kWh amounts were invoiced, Smart Power advised they would have highlighted this to the Meridian billing team then. With the correction of submission to the registry on 2 May 2024 for 6762 daily kWh, Meridian will back date and rebill One NZ and submit the correction of consumption.	2/06/2024	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

CONCLUSION

This is the first audit of the One NZ DUML since Meridian became the trader on 1 November 2023.

The database records the wattages and daily kWh for the items of load based on primary and secondary measurements taken in the field at the primary or secondary sides of the transformers supplying the equipment. Some of the equipment does not have primary values recorded and an adjustment factor is required to be added to the database values to ensure the correct wattage is used for submission. The adjustment factor of 72% was determined by conducting primary and secondary measurements of a sample of 36 items of loads to determine the correct wattages. The previous trader applied this factor to the database values and updated the registry daily kWh values accordingly. Meridian was not aware of the need to apply the adjustment factor and updated the registry daily kWh values based on the raw daily kWh values from the database when it became the trader. I checked the latest submission information for March 2024 against the database values and found a daily kWh difference of 1,405 kWh per day which equals 512,664 kWh of under submission per annum. On 2 May 2024 Meridian corrected the registry daily kWh figures and backdated the changes to 1 November 2023. The submission differences will be corrected by subsequent revision submissions.

I have recommended that an additional field is added to the database which clearly records the primary daily kWh figure to be used by the trader for each item of load. This field should be populated with either the measured primary value or derived value after application of the 72% adjustment factor.

The future risk rating indicates that the next audit be completed in 18 months. I have considered this in conjunction with Meridian's comments and I agree with this recommendation.

PARTICIPANT RESPONSE

Meridian has reviewed this report, and their comments are contained within its body.