

ELECTRICITY INDUSTRY PARTICIPATION CODE
DISTRIBUTED UNMETERED LOAD AUDIT REPORT



For

NZTA BOP AND GENESIS ENERGY

Prepared by: Steve Woods Veritek Limited

Date audit commenced: 1 May 2024

Date audit report completed: 12 August 2024

Audit report due date: 15 December 2018

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EXECUTIVE SUMMARY

This audit of the **Bay of Plenty - NZTA (NZTA BOP)** DUMML database and processes was conducted at the request of **Genesis Energy Limited (Genesis)** 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 DUMML audits version 1.1.

This database was created by combining the data from the NZTA Tauranga, NZTA Western BOP and NZTA Eastern BOP databases, and is the first audit of the combined database.

The earlier databases were due to be audited by the following dates.

| Database | Last audit date | Audit due date |
|---------------|-----------------|-------------------|
| NZTA BOP East | 1 June 2018 | 15 December 2018 |
| NZTA Tauranga | 16 August 2022 | 20 February 2024 |
| NZTA BOP West | 9 April 2021 | 28 September 2024 |

Audits are overdue for two of the three previous databases.

Genesis reconciles four ICPs using the UNM profile and seven ICPs using the GSL profile. I checked submissions for June 2024 and found that all of the ICPs using the GSL profile had correct submission information, but those using the UNM profile had different figures to those in the database.

The database is not confirmed as accurate with a 95% level of confidence resulting in an estimated over submission of 116,700 kWh per annum.

The field audit identified 143 discrepancies, which is a 33% error rate. The discrepancies are summarised as follows. A detailed spreadsheet has been supplied to Genesis and NZTA.

| Discrepancy | Quantity |
|---|----------|
| Lights in the field not in the database | 3 |
| Lights in the database not in the field | 16 |
| Incorrect wattage | 124 |

I recommend a full audit is conducted to ensure submission and invoicing is accurate.

This audit found five non-compliances and one recommendation is made. The future risk rating of 35 indicates that the next audit be completed in three months. I have considered this in conjunction with the comments from Genesis, and I recommend the next audit is conducted in six months to allow time to improve database updating processes and conduct a full field audit.

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 overdue for two of the three previous databases. | Moderate | High | 6 | Cleared |
| Deriving submission information | 2.1 | 11(1) of schedule 15.3 | Submission did not match the database for four of 11 ICPs leading to over submission of 794 kWh for June 2024. The database is not confirmed as accurate with a 95% level of confidence resulting in an estimated over submission of 116,700 kWh per annum. | Weak | High | 9 | Investigating |
| All load recorded in database | 2.5 | 11(2A) and (d) of schedule 15.3 | Three additional items of load found in the field. | Moderate | Low | 2 | Investigating |
| Database accuracy | 3.1 | 15.2 and 15.37B(b) | The database is not confirmed as accurate with a 95% level of confidence resulting in an estimated over submission of 116,700 kWh per annum. | Weak | High | 9 | Investigating |
| Volume information accuracy | 3.2 | 15.2 and 15.37B(c) | Submission did not match the database for four of 11 ICPs leading to over submission of 794 kWh for June 2024. The database is not confirmed as accurate with a 95% level of confidence resulting in an estimated over submission of 116,700 kWh per annum. | Weak | High | 9 | Investigating |
| Future Risk Rating | | | | | | 35 | |

| | | | | | | |
|-----------------------------------|-----------|-----------|-----------|-----------|----------|----------|
| Future risk rating | 1-3 | 4-6 | 7-8 | 9-17 | 18-26 | 27+ |
| Indicative audit frequency | 36 months | 24 months | 18 months | 12 months | 6 months | 3 months |

RECOMMENDATIONS

| Subject | Section | Recommendation |
|-------------------|---------|---|
| Database Accuracy | 3.1 | Conduct a full audit of the database to improve accuracy. |
| | | Review quality control processes to ensure database updates are accurate. |
| | | Genesis to liaise with relevant networks for NZTA new connections. |

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

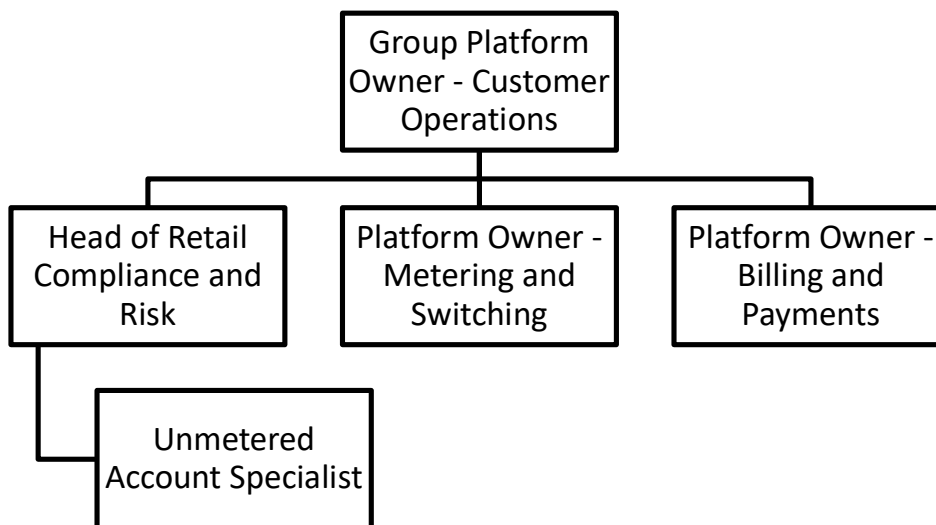
The Electricity Authority's website was reviewed to identify any exemptions relevant to the scope of this audit.

Audit commentary

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

1.2. Structure of Organisation

Genesis 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 |
|----------------|--------------------------------------|-------------------|
| Alysha Majury | Unmetered Account Specialist | Genesis |
| Kara Atkinson | Consultant | NZ Streetlighting |
| Denys Taylor | Network Manager - Bay of Plenty East | NZTA |
| Andreas Senger | | NZTA |

1.4. Hardware and Software

The SQL database used for the management of DUML is remotely hosted by thinkproject New Zealand Limited. The database is commonly known as “RAMM” which stands for “Road Assessment and Maintenance Management”. The specific data used for DUML is held in the Streetlight tables. thinkproject New Zealand Limited backs up the database and assists with disaster recovery as part of their hosting service.

Access to the database is secure by way of password protection.

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) | Previous database | Last audit date | Audit due date |
|-----------------|----------------------------------|---------|---------|-------------------------|--------------------------|-------------------|-----------------|-------------------|
| 0000056267HR2C5 | STATE HIGHWAY 33 | OWH0111 | GSL | 19 | 1,592 | New ICP | Never audited | N/A |
| 0001264706UNAD2 | TCC NZTA MTM0331 | MTM0331 | GSL | 442 | 105,081 | NZTA Tauranga | 16 August 2022 | 20 February 2024 |
| 1000023034BP9E0 | OPOTIKI | WAI0111 | UNM | 154 | 13,475 | NZTA BOP East | 1 June 2018 | 15 December 2018 |
| 1000023035BP5A5 | TE KAHA | WAI0501 | UNM | 33 | 2,367 | NZTA BOP East | 1 June 2018 | 15 December 2018 |
| 1000023037BP520 | KAWERAU ROAD | KAW0111 | UNM | 216 | 18,672 | NZTA BOP East | 1 June 2018 | 15 December 2018 |
| 1000023049BP3E6 | Transit NZ Streetlights | EDG0331 | UNM | 134 | 11,351 | NZTA BOP East | 1 June 2018 | 15 December 2018 |
| 1000524103PC795 | NZTA Streetlights KMO0331 | KMO0331 | GSL | 180 | 39,840 | NZTA Tauranga | 16 August 2022 | 20 February 2024 |
| 1000525040PC154 | NZTA Streetlights TGA0111 | TGA0111 | GSL | 199 | 49,272 | NZTA BOP West | 9 April 2021 | 28 September 2024 |
| 1000525041PCD11 | NZTA Streetlights TGA0331. | TGA0331 | GSL | 634 | 132,551 | NZTA BOP West | 9 April 2021 | 28 September 2024 |
| 1000525042PC1D1 | WBOPDC NZTA Streetlights TMI0331 | TMI0331 | GSL | 39 | 6,213 | NZTA BOP West | 9 April 2021 | 28 September 2024 |
| 1000611823PC971 | NZTA BOP Streetlights WKO0331 | WKO0331 | GSL | 2 | 446 | New ICP | Never audited | N/A |

1.7. Authorisation Received

All information was provided directly by Genesis and NZTA.

1.8. Scope of Audit

This audit of the Bay of Plenty - NZTA (NZTA BOP) DUML database and processes was conducted at the request of Genesis Energy Limited (Genesis) 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.

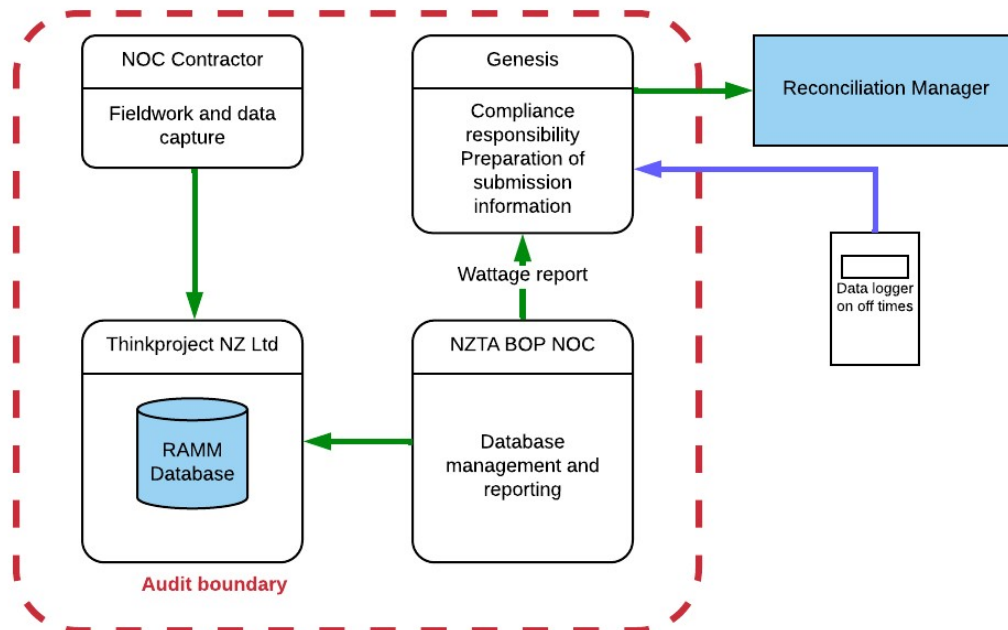
This database was created by combining the data from the NZTA Tauranga, NZTA Western BOP and NZTA Eastern BOP databases, and is the first audit of the combined database.

Genesis uses the registry information to reconcile the ICPs where the UNM profile is used, as shown in the table in **section 1.6**, and the GSL profile for the rest of the ICPs. Monthly reporting is provided to Genesis.

NZTA requires the NOC to maintain the RAMM database as part of their contract for maintenance carried out on the network. Contractors use pocket RAMM to track changes. Claims are submitted by the 28th of each month for all work carried out for the month prior. Install dates are being used by contractors when tracking changes in RAMM. Reporting of this activity is in development but is expected to provide Genesis with a monthly wattage report that tracks changes at a daily level.

The NOC contractor is required to have an internal quality control process to ensure that updates are accurate.

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 was undertaken of a sample of 427 items of load on 15 to 17 July 2024.

1.9. Summary of previous audit

This is the first audit undertaken of this database by Genesis Energy.

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

Genesis have requested Veritek to undertake this streetlight audit.

Audit commentary

This database was created by combining the data from the NZTA Tauranga, NZTA Western BOP and NZTA Eastern BOP databases, and is the first audit of the combined database.

The earlier databases were due to be audited by the following dates.

| Database | Last audit date | Audit due date |
|---------------|-----------------|-------------------|
| NZTA BOP East | 1 June 2018 | 15 December 2018 |
| NZTA Tauranga | 16 August 2022 | 20 February 2024 |
| NZTA BOP West | 9 April 2021 | 28 September 2024 |

Audits are overdue for two of the three previous databases.

Audit outcome

Non-compliant

| Non-compliance | Description |
|--|---|
| Audit Ref: 1.10 With: Clause 16A.26 and 17.295F From: 15-Dec-18 To: 30-Jul-24 | Audit overdue for two of the three previous databases. Potential impact: High Actual impact: High Audit history: None Controls: Moderate Breach risk rating: 6 |

| Audit risk rating | Rationale for audit risk rating | | |
|---|---|-----------------|------------------------|
| High | <p>Genesis has been the trader for two of the previous databases since 1 February 2024 and since 2016 for the BOP East database. Genesis has been waiting for NZTA to combine the databases so there is an auditable set of data. The controls are recorded as moderate, because they address risk most of the time.</p> <p>The audit risk rating is high because of the impact on annual kWh, which could have been resolved earlier if the audit was conducted earlier.</p> | | |
| Actions taken to resolve the issue | | Completion date | Remedial action status |
| <p>Genesis has been waiting for NZTA to combine the databases and as a result of this it has caused a delay in the audit being carried out after the audit due date.</p> <p>NZTA have now combined the databases and we have been receiving regular monthly data snapshots.</p> | | April 2024 | Cleared |
| Preventative actions taken to ensure no further issues will occur | | Completion date | |
| <p>NZTA are now providing regular monthly datasets, this has resolved in future delays due to no database/datasets being provided</p> | | April 2024 | |

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.

Audit commentary

Genesis reconciles four ICPs using the UNM profile and seven ICPs using the GSL profile. I checked submissions for June 2024 and found that all of the ICPs using the GSL profile had correct submission information, but those using the UNM profile had different figures to those in the database. The table below shows the discrepancies, indicating over submission by 794 kWh for June 2024. Genesis is in the process of correcting these figures and using the database rather than the registry, along with the GSL profile.

| ICP Number | Description | Submission | Expected submission based on database | Difference |
|-----------------|-------------------------|---------------|---------------------------------------|-------------|
| 1000023034BP9E0 | OPOTIKI | 6,441 | 5,742 | -699.45 |
| 1000023035BP5A5 | TE KAHA | 1,165 | 1,040 | -125.54 |
| 1000023037BP520 | KAWERAU ROAD | 7,923 | 8,051 | 127.52 |
| 1000023049BP3E6 | Transit NZ Streetlights | 4,933 | 4,837 | -96.07 |
| | Total | 20,462 | 19,609 | -794 |

The expected submission figure for ICP 1000023035BP5A5 was derived from a 100% field audit of all items of load using a 2018 database as the source data. A statistical sample was audited for the other ten ICPs and the database was found to have an error resulting in over submission of 116,700 kWh per annum (7.2%).

Audit outcome

Non-compliant

| Non-compliance | Description | | |
|--|---|------------------------|------------------------|
| Audit Ref: 2.1 With: Clause 11(1) of Schedule 15.3 From: 15-Dec-18 To: 30-Jul-24 | Submission did not match the database for four of 11 ICPs leading to over submission of 794 kWh for June 2024. The database is not confirmed as accurate with a 95% level of confidence resulting in an estimated over submission of 116,700 kWh per annum. Potential impact: High Actual impact: High Audit history: None Controls: Weak Breach risk rating: 9 | | |
| Audit risk rating | Rationale for audit risk rating | | |
| High | Genesis has been the trader for two of the previous databases since 1 February 2024 and since 2016 for the BOP East database. Genesis has been waiting for NZTA to combine the databases so there is an auditable set of data. The controls are recorded as weak, because they do not ensure the database is accurate to support accurate submission. The audit risk rating is high because of the impact on annual kWh. | | |
| Actions taken to resolve the issue | | Completion date | Remedial action status |
| Genesis continues to work with NZTA to increase the accuracy of their database. They are aware that it has been recommended that a 100% field audit would resolve any inaccuracies. Genesis has taken steps to resolve the profile issues in moving our DUMML ICP's to the GSL/UNM profile and this work is still currently ongoing. Genesis is currently investigating the use of the UNM profile and the discrepancies' that have been identified between the registry & RAMM data and also the field audit findings. | | Continuous Improvement | Investigating |
| Preventative actions taken to ensure no further issues will occur | | Completion date | |
| Genesis continues to investigate the UNM/GSL profile use and ensure the correct profile is in use and also that the correct submission data is being submitted. | | | |

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 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

An ICP is recorded for each item of load.

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 GPS coordinates 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.

Audit commentary

Lamp make, model and lamp wattage are included in the database.

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 a statistical sample of 427 items of load on 15 to 17 July 2024.

Audit commentary

The field audit findings are detailed in the table below.

| Discrepancy | Quantity |
|---|----------|
| Lights in the field not in the database | 3 |
| Lights in the database not in the field | 16 |
| Incorrect wattage | 124 |

I found three more lamps in the field than were recorded in the database. This is recorded as non-compliance. The database accuracy is discussed in **section 3.1**.

Audit outcome

Non-compliant

| Non-compliance | Description | | |
|--|--|-----------------|------------------------|
| Audit Ref: 2.5 With: Clause 11(2A) and (d) of Schedule 15.3 From: 15-Dec-18 To: 30-Jul-24 | Three additional items of load found in the field. Potential impact: High Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2 | | |
| Audit risk rating | Rationale for audit risk rating | | |
| Low | The controls are recorded as moderate because they mitigate risk most of the time but there is room for improvement. The impact on settlement and participants is minor; therefore, the audit risk rating is low. | | |
| Actions taken to resolve the issue | | Completion date | Remedial action status |

| | | |
|---|-------------------------|---------------|
| Genesis continues to work closely with NZTA to increase and maintain the accuracy of their database. NZTA are aware of the field findings for these to be updated in their database. | Continuous Improvement | Investigating |
| Preventative actions taken to ensure no further issues will occur | Completion date | |
| Field findings are with NZTA to be investigated and updated appropriately in their database | Proposed or actual date | |

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

The database functionality achieves compliance with the code.

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

RAMM contains 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

A field audit was undertaken of 427 items of load. I assessed the accuracy of this by using the DUML Statistical Sampling Guideline. The table below shows the survey plan.

| Plan Item | Comments |
|---------------------|---|
| Area of interest | NZTA BOP area |
| Strata | The database contains the NZTA items of load in for 11 ICPs in the Bay of Plenty region area. The processes for the management of all NZTA items of load are the same, but I decided to place the items of load into four strata: <ul style="list-style-type: none">• BOP (West BOP region),• Horizon (all lights on the Horizon network),• Mount (all lights in the Mt Maunganui region), and• Tauranga#1 (all lights in the Tauranga region). |
| Area units | I created a pivot table of the roads, and I used a random number generator in a spreadsheet to select a total of 40 sub-units. |
| Total items of load | 427 items of load were checked. |

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

The change management process to track changes and timeliness of database updates was evaluated.

Audit commentary

A field audit was conducted of a statistical sample of 427 items of load. The “database auditing tool” was used to analyse the results, which are shown in the table below.

| Result | Percentage | Comments |
|-------------------------|------------|--|
| The point estimate of R | 92.8% | Wattage from survey is lower than the database wattage by 7.2% |
| R _L | 84.6% | With a 95% level of confidence, it can be concluded that the error could be between -15.4% and -1.7% |
| R _H | 98.3% | |

These results were categorised in accordance with the “Distributed Unmetered Load Statistical Sampling Audit Guideline”, effective from 1 February 2019 and the table below shows that Scenario B (detailed below) applies. The conclusion from Scenario B is that the database is inaccurate with statistical significance at the 95% level.

In absolute terms the installed capacity is estimated to be 27 kW lower than the database indicates.

There is a 95% level of confidence that the installed capacity is between 6 kW to 58 kW lower than the database.

In absolute terms, total annual consumption is estimated to be 116,700 kWh lower than the DUML database indicates.

There is a 95% level of confidence that the annual consumption is between 26,900 kWh p.a. to 248,800 kWh pa. lower than the database indicates.

| Scenario | Description |
|--|--|
| A - Good accuracy, good precision | <p>This scenario applies if:</p> <ul style="list-style-type: none"> (a) R_H is less than 1.05; and (b) R_L is greater than 0.95 <p>The conclusion from this scenario is that:</p> <ul style="list-style-type: none"> (a) the best available estimate indicates that the database is accurate within +/- 5 %; and (b) this is the best outcome. |
| B - Poor accuracy, demonstrated with statistical significance | <p>This scenario applies if:</p> <ul style="list-style-type: none"> (a) the point estimate of R is less than 0.95 or greater than 1.05 (b) as a result, either R_L is less than 0.95 or R_H is greater than 1.05. <p>There is evidence to support this finding. In statistical terms, the inaccuracy is statistically significant at the 95% level</p> |
| C - Poor precision | <p>This scenario applies if:</p> <ul style="list-style-type: none"> (a) the point estimate of R is between 0.95 and 1.05 (b) R_L is less than 0.95 and/or R_H is greater than 1.05 <p>The conclusion from this scenario is that the best available estimate is not precise enough to conclude that the database is accurate within +/- 5 %</p> |

The field audit identified 143 discrepancies, which is a 33% error rate. The discrepancies are summarised as follows. A detailed spreadsheet has been supplied to Genesis and NZTA.

| Discrepancy | Quantity |
|---|----------|
| Lights in the field not in the database | 3 |
| Lights in the database not in the field | 16 |
| Incorrect wattage | 124 |

I recommend a full audit is conducted to ensure submission and invoicing is accurate.

| Description | Recommendation | Audited party comment | Remedial action |
|-------------------|---|--|-----------------|
| Database accuracy | Conduct a full audit of the database to improve accuracy. | NZTA are aware of the large discrepancies identified and are working on updating the field finding results. NZTA are aware of the recommendation that a full field audit is/should be carried out to resolve the large discrepancies and Genesis continues to encourage that this be carried out as soon as possible. | Investigating |

Lamp description and capacity accuracy

Lamp make, model and lamp wattage are included in the database.

ICP Accuracy

All NSPs have an ICP, and no discrepancies were identified.

Change management process findings

NZTA requires the NOC to maintain the RAMM database as part of their contract for maintenance carried out on the network. Contractors use pocket RAMM to track changes. Claims are submitted by the 28th of each month for all work carried out for the month prior. Install dates are being used by contractors when tracking changes in RAMM. Reporting of this activity is in development but is expected to provide Genesis with a monthly wattage report that tracks changes at a daily level.

The NOC contractor is required to have an internal quality control process to ensure that updates are accurate. The audit findings indicate that this process is not working as expected and I recommended that this is reviewed.

| Recommendation | Description | Audited party comment | Remedial action |
|-------------------|---|---|-----------------|
| Database Accuracy | Review quality control processes to ensure database updates are accurate. | Genesis is now receiving consistent monthly RAMM data extracts. NZTA is aware that due to untimely or non-updates, this is causing ongoing data discrepancies in the RAMM database. Genesis continues to work with NZTA to ensure a robust process is established to ensure any changes on the network are being updated accurately and in a timely manner. NZTA are aware that a 100% field audit would resolve the current discrepancies to allow a robust process to be effect moving forward. | Investigating |

The new connection process is managed on a project basis. Much like new Council lights, NZTA only accepts the assets at the end of project and the contractor controls the livening of new lights with the relevant networks. This will be resulting in lights being on and burning before they are being reconciled. I recommend that Genesis work with the relevant networks to ensure there are robust processes in place to ensure new connections are reconciled from the time they are electrically connected.

| Recommendation | Description | Audited party comment | Remedial action |
|-------------------|--|--|-----------------|
| Database Accuracy | Genesis to liaise with relevant networks for NZTA new connections. | Genesis to make contact with Network to understand the current state, set expectations and establish a robust process in future to ensure all usage is being reconciled. | Investigating |

Outage patrols are undertaken on a three-monthly basis.

There are no private or festive lights connected to the NZTA load.

Audit outcome

Non-compliant

| Non-compliance | Description | |
|--|--|-------------------------------|
| <p>Audit Ref: 3.1</p> <p>With: Clause 15.2 and 15.37B(b)</p> <p>From: 15-Dec-18</p> <p>To: 30-Jul-24</p> | <p>The database is not confirmed as accurate with a 95% level of confidence resulting in an estimated over submission of 116,700 kWh per annum.</p> <p>Potential impact: High</p> <p>Actual impact: High</p> <p>Audit history: None</p> <p>Controls: Weak</p> <p>Breach risk rating: 9</p> | |
| Audit risk rating | Rationale for audit risk rating | |
| High | <p>Genesis has been the trader for two of the previous databases since 1 February 2024 and since 2016 for the BOP East database. Genesis has been waiting for NZTA to combine the databases so there is an auditable set of data. The controls are recorded as weak, because the processes for updating the database does not ensure the data is accurate.</p> <p>The audit risk rating is high because of the impact on annual kWh.</p> | |
| Actions taken to resolve the issue | Completion date | Remedial action status |

| | | |
|--|------------------------|---------------|
| <p>Genesis is now receiving consistent monthly RAMM data extracts. NZTA is aware that due to untimely or non-updates, this is causing ongoing data discrepancies in the RAMM database.</p> <p>Genesis continues to work with NZTA to ensure a robust process is established to ensure any changes on the network are being updated accurately and in a timely manner.</p> <p>NZTA are aware that a 100% field audit would resolve the current discrepancies to allow a robust process to be effect moving forward.</p> | Continuous Improvement | Investigating |
| Preventative actions taken to ensure no further issues will occur | Completion date | |
| <p>Genesis continues to work with NZTA to ensure a robust process is established to ensure any changes on the network are being updated accurately and in a timely manner.</p> | Continuous Improvement | |

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 all ICPs have 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

Genesis reconciles four ICPs using the UNM profile and seven ICPs using the GSL profile. I checked submissions for June 2024 and found that all of the ICPs using the GSL profile had correct submission information, but those using the UNM profile had different figures to those in the database. The table below shows the discrepancies, indicating over submission by 794 kWh for June 2024. Genesis is in the process of correcting these figures and using the database rather than the registry, along with the GSL profile.

| ICP Number | Description | Submission | Expected submission based on database | Difference |
|-----------------|-------------------------|---------------|---------------------------------------|-------------|
| 1000023034BP9E0 | OPOTIKI | 6,441 | 5,742 | -699.45 |
| 1000023035BP5A5 | TE KAHA | 1,165 | 1,040 | -125.54 |
| 1000023037BP520 | KAWERAU ROAD | 7,923 | 8,051 | 127.52 |
| 1000023049BP3E6 | Transit NZ Streetlights | 4,933 | 4,837 | -96.07 |
| | Total | 20,462 | 19,609 | -794 |

The expected submission figure for ICP 1000023035BP5A5 was derived from a 100% field audit of all items of load using a 2018 database as the source data. A statistical sample was audited for the other ten ICPs and the database was found to have an error resulting in over submission of 116,700 kWh per annum (7.2%).

Audit outcome

Non-compliant

| Non-compliance | Description | | | | |
|--|--|-----------------|------------------------|--|--|
| <p>Audit Ref: 3.2 With: Clause 15.2 and 15.37B(c) From: 15-Dec-18 To: 30-Jul-24</p> | <p>Submission did not match the database for four of 11 ICPs leading to over submission of 794 kWh for June 2024.</p> <p>The database is not confirmed as accurate with a 95% level of confidence resulting in an estimated over submission of 116,700 kWh per annum.</p> <p>Potential impact: High Actual impact: High Audit history: None Controls: Weak Breach risk rating: 9</p> | | | | |
| Audit risk rating | Rationale for audit risk rating | | | | |
| High | <p>Genesis has been the trader for two of the previous databases since 1 February 2024 and since 2016 for the BOP East database. Genesis has been waiting for NZTA to combine the databases so there is an auditable set of data. The controls are recorded as weak, because they do not ensure the database is accurate to support accurate submission.</p> <p>The audit risk rating is high because of the impact on annual kWh.</p> | | | | |
| Actions taken to resolve the issue | <table border="1"> <thead> <tr> <th>Completion date</th> <th>Remedial action status</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> </tr> </tbody> </table> | Completion date | Remedial action status | | |
| Completion date | Remedial action status | | | | |
| | | | | | |

| | | |
|--|-------------------------------|----------------------|
| <p>Genesis is now receiving consistent monthly RAMM data extracts. NZTA is aware that due to untimely or non-updates, this is causing ongoing data discrepancies in the RAMM database.</p> <p>Genesis continues to work with NZTA to ensure a robust process is established to ensure any changes on the network are being updated accurately and in a timely manner.</p> <p>NZTA are aware that a 100% field audit would resolve the current discrepancies to allow a robust process to be effect moving forward.</p> | <p>Continuous Improvement</p> | <p>Investigating</p> |
| <p>Preventative actions taken to ensure no further issues will occur</p> | <p>Completion date</p> | |
| <p>Genesis continues to work with NZTA to ensure a robust process is established to ensure any changes on the network are being updated accurately and in a timely manner.</p> | <p>Continuous Improvement</p> | |

CONCLUSION

This database was created by combining the data from the NZTA Tauranga, NZTA Western BOP and NZTA Eastern BOP databases, and is the first audit of the combined database.

The earlier databases were due to be audited by the following dates.

| Database | Last audit date | Audit due date |
|---------------|-----------------|-------------------|
| NZTA BOP East | 1 June 2018 | 15 December 2018 |
| NZTA Tauranga | 16 August 2022 | 20 February 2024 |
| NZTA BOP West | 9 April 2021 | 28 September 2024 |

Audits are overdue for two of the three previous databases.

Genesis reconciles four ICPs using the UNM profile and seven ICPs using the GSL profile. I checked submissions for June 2024 and found that all of the ICPs using the GSL profile had correct submission information, but those using the UNM profile had different figures to those in the database.

Database is not confirmed as accurate with a 95% level of confidence resulting in an estimated over submission of 116,700 kWh per annum.

The field audit identified 143 discrepancies, which is a 33% error rate. The discrepancies are summarised as follows. A detailed spreadsheet has been supplied to Genesis and NZTA.

| Discrepancy | Quantity |
|---|----------|
| Lights in the field not in the database | 3 |
| Lights in the database not in the field | 16 |
| Incorrect wattage | 124 |

I recommend a full audit is conducted to ensure submission and invoicing is accurate.

This audit found five non-compliances and one recommendation is made. The future risk rating of 35 indicates that the next audit be completed in three months. I have considered this in conjunction with the comments from Genesis, and I recommend the next audit is conducted in six months to allow time to improve database updating processes and conduct a full field audit.

PARTICIPANT RESPONSE

Genesis is now receiving consistent RAMM data base extracts.

Genesis and NZTA are aware there is a large number of discrepancies in the database that need to be resolved and NZTA is aware that the most recommended remedy is to complete a 100% field audit which Genesis highly encourages is carried out.

NZTA are working through the field audit findings and are aware of the requirements to have an accurate database.

Genesis continues to work with NZTA to ensure there are robust processes in place from both to ensure livening, changes in field, new connections are being captured in a timely manner.

Genesis is aware that this work is going to take sometime to resolve with NZTA who have a lot of work required to get robust processes in place and there are constraints in carrying out a 100% field audit due to costing.