ELECTRICITY INDUSTRY PARTICIPATION CODE
DISTRIBUTED UNMETERED LOAD AUDIT REPORT

VERITEK

For

TASMAN DISTRICT COUNCIL
AND GENESIS ENERGY LIMITED

Prepared by: Steve Woods

Date audit commenced: 15 July 2020

Date audit report completed: 7 October 2020

Audit report due date: 1 September 2020

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EXECUTIVE SUMMARY

This audit of the **Tasman District Council (TDC)** 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.

TDC switched to Genesis on 01/03/2020. Previously they were audited in conjunction with the NZTA lights. These are two separate customers with different retailers therefore this audit is of the TDC lights only.

Network Tasman hold an access database for the Tasman DC unmetered streetlights. Fault, maintenance and upgrade work is conducted by PowerTech and the database is managed by Network Tasman. New streetlight connections are undertaken by Delta.

Genesis reconciles the TDC DUML load using the CST profile. A monthly wattage report is provided to Genesis from the database by Network Tasman. Genesis derives the hours of operation information using a data logger.

The field audit found that database accuracy was within the allowable +/- 5% threshold.

The audit found four non-compliances relating to minor inaccuracies in the database and a difference in the number of lights and volume submitted for one ICP. I have made three recommendations for improvements in the database fields.

The future risk rating of seven indicates that the next audit be completed in 18 months and I have considered this in conjunction with Genesis' 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 1,215 kWh for June due to discrepancy between data extract and volume submitted. The data used for submission does not track changes at a daily basis and is provided as a snapshot. Incorrect wattages for 19 items of load resulting in an estimated minor over submission of 40.15kWh per annum.	Moderate	Low	2	Investigating
Location of load	2.3	11(2)(b) of Schedule 15.3	105 items of load with insufficient details to locate these.	Strong	Low	1	Investigating
Database accuracy	3.1	15.2 and 15.37B(b)	Incorrect wattages for 19 items of load resulting in an estimated minor over submission of 40.15kWh per annum.	Moderate	Low	2	Investigating
Volume information accuracy	3.2	15.2 and 15.37B(c)	Under submission of 1,215 kWh for June due to discrepancy between data extract and volume submitted. Incorrect wattages for 19 items of load resulting in an estimated minor over submission of 40.15kWh per annum. The data used for submission does not track changes at a daily basis and is provided as a snapshot.	Moderate	Medium	2	Investigating
Future Risk Rating						7	

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

RECOMMENDATIONS

Subject	Section	Description	Recommendation
Location of each item of load	2.3	Clause 11(2)(b) of Schedule 15.3	Add GPS co-ordinates to items of load with insufficient info.
Location of each item of load	2.3	Clause 11(2)(b) of Schedule 15.3	Review the “Area” field to contain “area” details only and not street level detail.
Database accuracy	3.1	Clause 15.2 and 15.37B(b)	Update database with lamp descriptions to confirm the correct wattage has been applied.

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

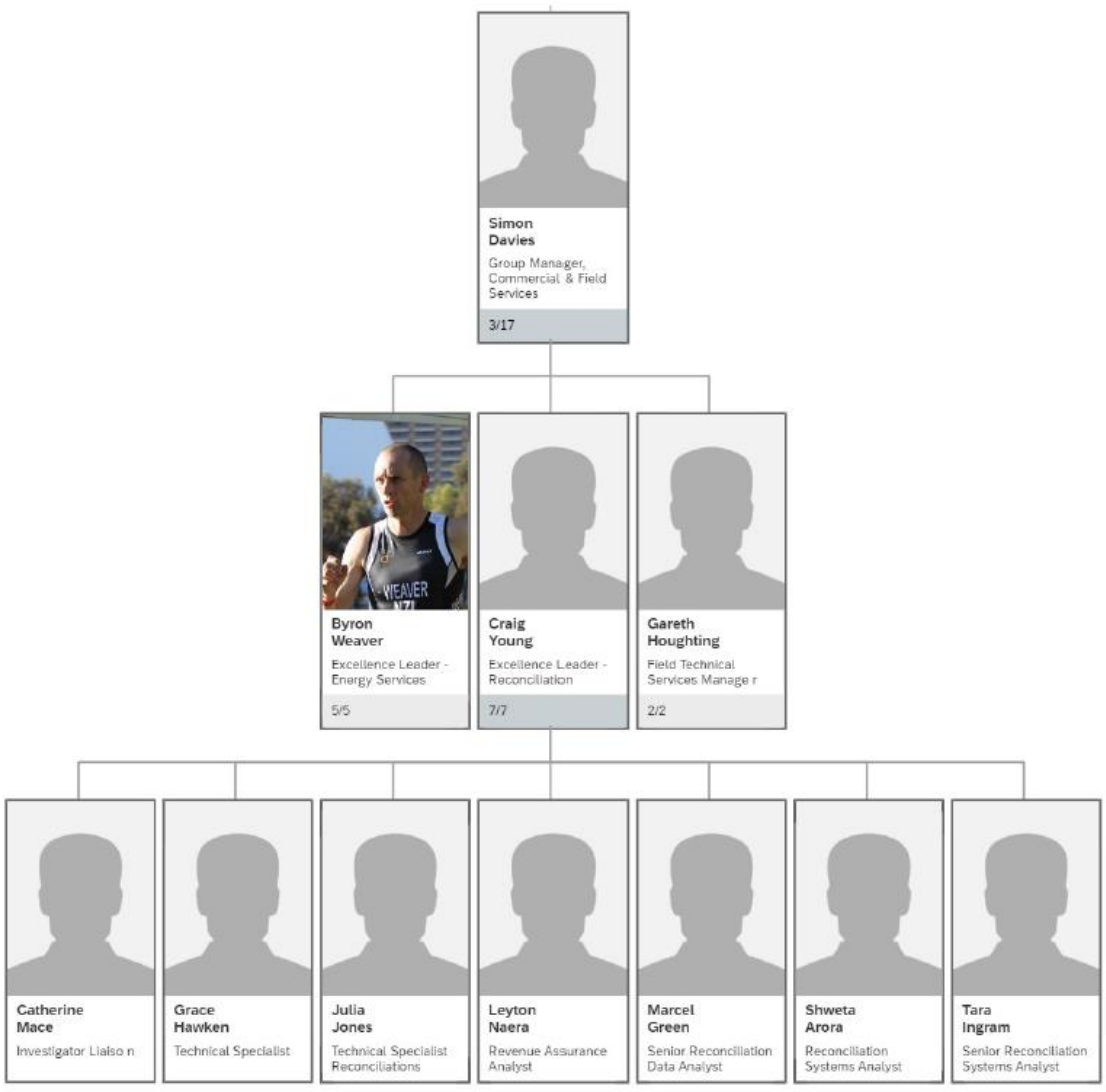
The Electricity Authority's website was reviewed to identify any exemptions relevant to the scope of this audit.

Audit commentary

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

1.2. Structure of Organisation

Genesis Energy provided a copy of their organisational structure.



1.3. Persons involved in this audit

Auditor:

Steve Woods

Veritek Limited

Electricity Authority Approved Auditor

Supporting Auditor:

Brett Piskulic

Veritek Limited

Electricity Authority Approved Auditor

Other personnel assisting in this audit were:

Name	Title	Company
Kerryn Little	Easement Officer	Network Tasman
Wendy Hartshorne	Revenue Protection Officer/Registry Analyst	Network Tasman
Craig Young	Excellence Leader - Reconciliation	Genesis Energy
Grace Hawken	Technical Specialist - Reconciliations Team	Genesis Energy

1.4. Hardware and Software

The Access database used by Network Tasman is backed-up is in accordance with standard industry procedures. Access to the database is secure by way of password protection.

1.5. Breaches or Breach Allegations

There are no breach allegations relevant to the scope of this audit.

1.6. ICP Data

ICP Number	Description	NSP	Profile	Number of items of load	Database wattage (watts)
0000090005NTAE5	TDC STREETLIGHTING KIKIWA	KIK0111	CST	70	2,638
0000090003NTB6A	TDC STREETLIGHTING MOTUEKA	STK0661	CST	847	35,381
0000090004NT6A0	TDC STREETLIGHTING MOTUPIPI	STK0661	CST	254	8,962
0000090006NT625	TDC STREETLIGHTING MURCHISON	MCH0111	CST	46	1,791
0000090002NT72F	TDC STREETLIGHTING STOKE	STK0331	CST	2,120	106,167
TOTAL				**3,337**	**154,939**

1.7. Authorisation Received

All information was provided directly by Genesis or Network Tasman.

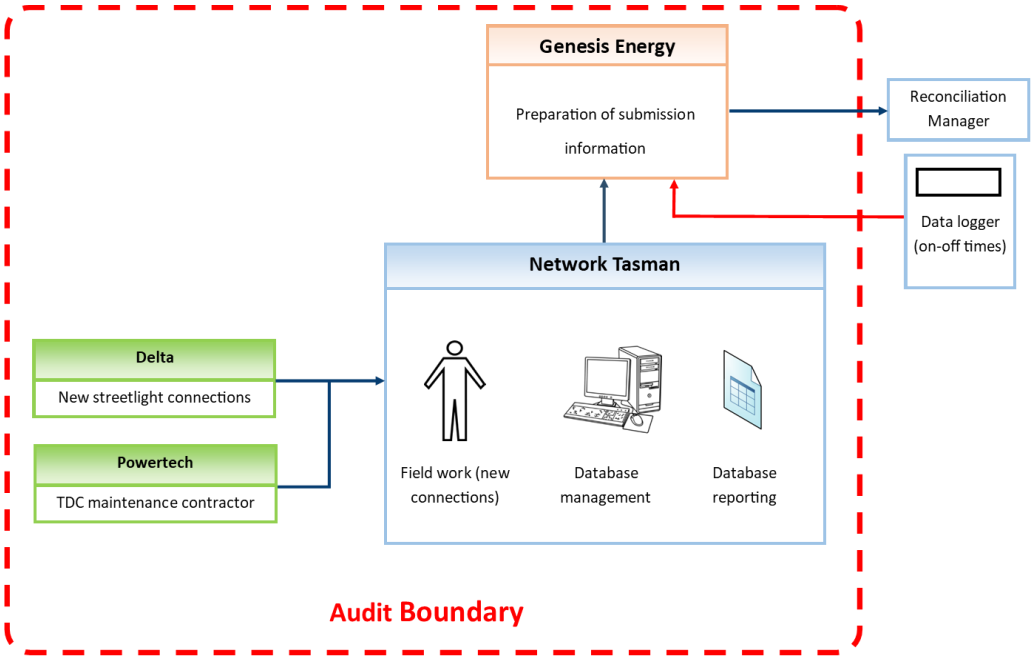
1.8. Scope of Audit

This audit of the Tasman District Council 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.

Network Tasman hold an access database for the Tasman DC unmetered streetlights. Fault, maintenance and upgrade work is conducted by PowerTech and the database is managed by Network Tasman. New streetlight connections are undertaken by Delta.

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.



The field audit was undertaken of a statistical sample of 260 items of load on 2nd & 3rd September 2020.

1.9. Summary of previous audit

The previous audit of this database was undertaken by Rebecca Elliot of Veritek Limited in November 2019. The summary table below shows the statuses of the non-compliances raised in the previous audit.

Subject	Section	Clause	Non-compliance	Status
Deriving Submission Information	2.1	11(1) of Schedule 15.3	Incorrect kW value calculations resulting in a combined over submission of (16,524.84 + 10,212.64) 26,737.48kWh from March 2019 - October 2019.	Cleared
			Calculation methodology does not meet the code requirements.	Cleared
			Database is not confirmed as accurate with a 95% level of confidence.	Cleared
			Incorrect wattages for 31 items of load resulting in an estimated minor under submission of 442.5kWh per annum.	Still existing
Location of load	2.3	11(2)(b) of Schedule 15.3	73 items of load with insufficient details to locate these.	Still existing
Description and capacity of load	2.4	11(2)(c)&(d) of Schedule 15.3	One item of load with no light or wattage details populated.	Cleared

Subject	Section	Clause	Non-compliance	Status
All load recorded in the database	2.5	11(2A) of Schedule 15.3	Three additional lights found in the field.	Cleared
Database accuracy	3.1	15.2 & 15.37(b)	Database is not confirmed as accurate with a 95% level of confidence. One item of load missing lamp description and wattage. Incorrect wattages for 31 items of load resulting in an estimated minor under submission of 442.5kWh per annum.	Cleared Cleared Still existing
Volume information accuracy	3.2	15.2 & 15.37(c)	Incorrect kW value calculations resulting in a combined over submission of (16,524.84 + 10,212.64) 26,737.48kWh from March 2019 - October 2019. Calculation methodology does not meet the code requirements. Database is not confirmed as accurate with a 95% level of confidence. Incorrect wattages for 31 items of load resulting in an estimated minor under submission of 442.5kWh per annum.	Cleared Cleared Cleared Still existing

Table of recommendations

Subject	Recommendation	Status
Deriving submission information	I recommend validation processes are reviewed to ensure such errors are identified and corrected.	Cleared
	Monthly report tracking change at a daily level be provided from the database.	Still existing
Location of each item of load	Add GPS co-ordinates to items of load with insufficient info.	Still existing
	Restore the “Area” field to contain “area” details only and not street level detail.	Still existing
Database accuracy	Update database with lamp descriptions to confirm the correct wattage has been applied.	Still existing

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 audit report confirms that the requirement to conduct an audit has been met for this database.

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

Genesis reconciles this DUML load using the CST profile. I checked the submission methodology.

A monthly wattage report is provided to Genesis from the database by Network Tasman. Genesis derives the hours of operation information using a data logger. I checked the database extract provided by Network Tasman on 9th July against the submission totals supplied by Genesis for June and found that there was a difference in the number of lights and volume submitted for one ICP as detailed in the table below:

ICPs	Fittings number from June submission	Fittings number from 9th July database extract	Difference	kWh value submitted	Calculated kWh value from database	kWh difference
0000090002NT72F	2,055	2,120	65	45,758	46,973	-1,215 kWh

The discrepancy results in an under submission of 1,215 kWh for June 2020 and an estimated annualised under submission of 11,732 kWh (based on annual burn hours of 4,271 as is detailed in the DUML database auditing tool).

The field audit found that database accuracy was within the allowable +/- 5% threshold.

A check of the wattages applied identified 19 lights with the incorrect wattage applied resulting in an estimated very minor over submission of 40.15 kWh per annum as detailed in **section 3.1**.

On 18 June 2019, the Electricity Authority issued a memo clarifying the memo of 2012 that stated that a monthly snapshot was sufficient to calculate submission from, and confirmed the code requirement to calculate the correct monthly load must:

- take into account when each item of load was physically installed or removed, and
- wash up volumes must take into account where historical corrections have been made to the DUML load and volumes.

The current process of using a database snapshot does not meet the code requirements. This is recorded as non-compliance.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.1 With: Clause 11(1) of Schedule 15.3 From: 31-Aug-17 To: 09-Jul-20	Under submission of 1,215 kWh for June due to discrepancy between data extract and volume submitted. The data used for submission does not track changes at a daily basis and is provided as a snapshot. Incorrect wattages for 19 items of load resulting in an estimated minor over submission of 40.15kWh per annum. Potential impact: Low Actual impact: Low Audit history: Three times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as moderate, as they are sufficient to mitigate the risk most of the time, but there is room for improvement. The audit risk rating is low based on the estimated kWh volume variances detailed above.

Actions taken to resolve the issue	Completion date	Remedial action status
June data will be revised due to the customer failing to provide the June data on time. Genesis will address the 19 items of load with wattage variances with the council's database manager. Genesis will reiterate timeliness of data provision is required. Tracking of changes will need to be readdressed with the network Tasman who maintains the database.	01/02/2021	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
As above		

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

Code reference

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

Code related audit information

The DUML database must contain:

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

Audit observation

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

Audit commentary

All items of load have an ICP assigned.

Audit outcome

Compliant

2.3. Location of each item of load (Clause 11(2)(b) of Schedule 15.3)

Code reference

Clause 11(2)(b) of Schedule 15.3

Code related audit information

The DUML database must contain the location of each DUML item.

Audit observation

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

Audit commentary

The database contains fields for light ID, location description, area and GPS co-ordinates. All but 440 (13%) of the database have GPS co-ordinates recorded. Of these all but 105 items of load have sufficient details to locate them. The majority were originally loaded with lot numbers and have not been updated with the street number or GPS co-ordinates. This is recorded as non-compliance below. I recommend that GPS co-ordinates are captured for these items of load.

Recommendation	Description	Audited party comment	Remedial action
Location of each item of load	Add GPS co-ordinates to items of load with insufficient information to locate them.	Genesis will request the relative gps information is accurately populated.	Investigating

The database contains an "Area" field which contains a mixture of areas and individual street names, effectively containing two different levels of addressing in the one field. I recommend that the field be reviewed to contain areas only.

Recommendation	Description	Audited party comment	Remedial action
Location of each item of load	Review the "Area" field to contain "area" details only and not street level detail.	Genesis will request the information only contains regional area information	Investigating

Audit outcome

Non-compliant

Non-compliance	Description

Audit Ref: 2.3 With: Clause 11(2)(b) of Schedule 15.3 From: 31-Aug-17 To: 09-Jul-20	105 items of load with insufficient details to locate these. Potential impact: Low Actual impact: Low Audit history: Once Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as strong as the processes in place require all new lights to have GPS co-ordinates recorded. The audit risk rating is recorded as low due to the small number of lights that can't be readily located.

Actions taken to resolve the issue	**Completion date**	**Remedial action status**
Genesis will advise the council to adequately review and make the necessary corrections to the locational detail fields.	01/02/2021	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis has included the locational details to their exception review control	01/10/2020	

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 light type and wattage capacity,
- wattage capacities include any ballast or gear wattage, and
- each item of load has a light type, light wattage, and gear wattage recorded.

Audit commentary

The database contains fields for lamp type, lamp size and total wattage (this includes ballast where required). All items of load have a lamp type, size and total wattage figure populated. No lamp or gear wattages were invalidly recorded as zero.

The accuracy of the recorded wattages and lamp descriptions is discussed in **section 3.1**.

Audit outcome

Compliant

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

Code reference

Clause 11(2A) of Schedule 15.3

Code related audit information

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

Audit observation

The field audit was undertaken of a statistical sample of 260 items of load on 2nd & 3rd September 2020. The sample was selected from four strata, as detailed in **section 3.1**.

Audit commentary

The field audit discrepancies are detailed in the table below:

Street	Database count	Field count	Light count difference	Wattage recorded incorrectly	Comments
Lodder Lane	6	6	0	1	1 x 27W LED light recorded as 35W LED in the database.
Kaiteriteri-Sandy Bay Road	6	6	0	2	1 x 36W LED light recorded as 100W LED in the database. 1 x 24W LED light recorded as 100W LED in the database.
Grand Total	**260**	**260**	**0**	**3**	

This clause relates to lights in the field that are not recorded in the database. There were no additional items of load found in 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 database was examined.

Audit commentary

The access database functionality achieves compliance with the code.

The change management process and the compliance of the database reporting provided to Genesis is detailed in **sections 3.1** and **3.2**.

Audit outcome

Compliant

2.7. Audit trail (Clause 11(4) of Schedule 15.3)

Code reference

Clause 11(4) of Schedule 15.3

Code related audit information

The DUML database must incorporate an audit trail of all additions and changes that identify:

- *the before and after values for changes*
- *the date and time of the change or addition*
- *the person who made the addition or change to the database.*

Audit observation

The database was checked for audit trails.

Audit commentary

The database has a complete audit trail.

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

Genesis's submissions are based on an extract from the Network Tasman database. A database extract was provided in July 2020 and 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	Tasman District Council Street Lights
Strata	The database contains the items of load for DUML ICPs on the Network Tasman network. The processes for the management of all items of load are the same, but I decided to place the items of load into four strata based on the street names: 1. A-F 2. G-L 3. M-R 4. S-Y.
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 53 sub-units.
Total items of load	260 items of load were checked, which made up over 8% of the total database wattage.

Wattages were checked for alignment with the published standardised wattage table produced by the Electricity Authority against the database or in the case of LED lights against the LED light specification.

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

Audit commentary

Field audit findings

A field audit was conducted of a statistical sample of 260 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	98.8	Wattage from survey is lower than the database wattage by 1.2%
R_L	95.2	With a 95% level of confidence it can be concluded that the error could be between -4.8% and 0%
R_H	100	

These results were categorised in accordance with the "Distributed Unmetered Load Statistical Sampling Audit Guideline", effective from 01/02/19 and the table below shows that Scenario A (detailed below) applies. Compliance is confirmed.

The conclusion from Scenario A is that the variability of the sample results across the strata means that the true wattage (installed in the field) could be between 4.8% lower and equal to the wattage recorded in the DUML database. Compliance is recorded because the potential error is less than 5.0%.

In absolute terms the installed capacity is estimated to be equal to the capacity indicated by the database.

There is a 95% level of confidence that the installed capacity is equal to the wattage recorded in the database.

In absolute terms, total annual consumption is estimated to be 600 kWh lower than the DUML database indicates.

There is a 95% level of confidence that the annual consumption is up to 2,600 kWh p.a. lower than the database indicates.

Scenario	**Description**
A - **Good accuracy, good precision**	This scenario applies if: (a) R_H is less than 1.05; and (b) R_L is greater than 0.95 The conclusion from this scenario is that: (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**	This scenario applies if: (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. There is evidence to support this finding. In statistical terms, the inaccuracy is statistically significant at the 95% level
C - **Poor precision**	This scenario applies if: (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 The conclusion from this scenario is that the best available estimate is not precise enough to conclude that the database is accurate within +/- 5 %

Light description and capacity accuracy

Lamp and gear wattages were compared to the expected values. This found a minor number of discrepancies. These are detailed in the table below:

Lamp make model	Quantity	Database lamp wattage	Expected lamp wattage	Variance
Fluor (26 watts)	6	33	28.6	26.4
Fluor (2x58W)	2	130	144	-14
Fluor (2x60W)	1	132	143	-11
Metal Halide (150W)	2	167	168	-2
Metal Halide (70W)	8	86	83	24
			TOTAL	9.4

This will result in a very minor estimated annual over submission of 40.15 kWh per annum (based on 4,271 burn hours). This is recorded as non-compliance below.

The database records all 3,219 LED lights as "LED" lights only. There are 61 different LED wattages recorded. 1,192 of these are the same light type (picture below) but are recorded as 25W, 35W, 36W or 53W LEDs. It is possible that these are all correct as the light maybe programmable. I repeat the recommendation from the previous audit that all LED light descriptions are reviewed to ensure that they contain enough detail to confirm that the correct wattage has been applied.

Recommendation	Description	Audited party comment	Remedial action
Database Accuracy	Update database with lamp descriptions to confirm the correct wattage has been applied.	Genesis will be raising the outstanding wattage variances with the intent to clearly depict correct lamp descriptions for confirmation of wattage.	Investigating

Change management process findings

Fault, maintenance and upgrade work is managed by Powertech. All changes made require a "streetlight advice form" to be supplied to Network Tasman. The database assigns a unique identifier per light. Each

item of load has a "UML start date" and "UML end date". The "UML start date" relates to the installation date for the light. The "UML end date" defaults to 2099 and is updated to the date of removal when the light is replaced. As changes are made the ICP kW value is calculated on the day of updating. This is updated on a daily basis in the Network Tasman ICP database.

The new connection process follows the same process as changes made in the field. This work is undertaken by Delta. A "streetlight service form" is completed and an "as built" drawing is provided. GPS co-ordinates are not provided as part of this process and often there are lot numbers at this time resulting in lights that have insufficient information to locate them.

The LED roll out is complete in this area. There is no CMS system in place and no plans for one to be installed.

Festive lights

Network Tasman confirmed that there is no festive lighting used on the Network Tasman network.

Private lights

Private lights are recorded as either standard unmetered load or shared unmetered load as required by the code. No private lights are recorded in the database.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.1 With: Clause 15.2 and 15.37B(b) From: 31-Aug-17 To: 09-Jul-20	Incorrect wattages for 19 items of load resulting in an estimated minor over submission of 40.15kWh per annum. Potential impact: Low Actual impact: Low Audit history: Twice Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as moderate, as they are sufficient to mitigate the risk most of the time, but there is room for improvement. The impact is assessed to be low due to the kWh volumes.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis will be raising the outstanding wattage variances with the intent to clearly depict correct lamp descriptions for confirmation of wattage.	01/02/2021	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
As above		

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 on hours against the submitted figure to confirm accuracy.

Audit commentary

Genesis reconciles this DUML load using the CST profile.

The total volume submitted to the Reconciliation Manager is based on the most recently received database report provided by Network Tasman.

As detailed in **section 2.1**, I checked the database extract provided by Network Tasman on 9th July against the submission totals supplied by Genesis for June and found that there was a difference in the number of lights and volume submitted for one ICP. The discrepancy results in an under submission of 1,215 kWh for June 2020 and an estimated annual under submission of 11,732 kWh (based on annual burn hours of 4,271 as is detailed in the DUML database auditing tool).

Incorrect wattages for 19 items of load resulting in an estimated minor over submission of 40.15kWh per annum. This is detailed in **section 3.1**.

On 18 June 2019, the Electricity Authority issued a memo clarifying the memo of 2012 that stated that a monthly snapshot was sufficient to calculate submission from, and confirmed the code requirement to calculate the correct monthly load must:

- take into account when each item of load was physically installed or removed, and
- wash up volumes must take into account where historical corrections have been made to the DUML load and volumes.

The current process of using a database snapshot does not meet the code requirements. This is recorded as non-compliance.

Audit outcome

Non-compliant

Non-compliance	Description

Audit Ref: 3.2 With: Clause 15.2 and 15.37B(c) From: 31-Aug-17 To: 09-Jul-20	Under submission of 1,215 kWh for June due to discrepancy between data extract and volume submitted. Incorrect wattages for 19 items of load resulting in an estimated minor over submission of 40.15kWh per annum. The data used for submission does not track changes at a daily basis and is provided as a snapshot. Potential impact: Low Actual impact: Low Audit history: Three times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Medium	Controls are rated as moderate, as they are sufficient to mitigate the risk most of the time, but there is room for improvement. The audit risk rating is low based on the estimated kWh volume variances detailed above.

Actions taken to resolve the issue	**Completion date**	**Remedial action status**
June data will be revised due to the customer failing to provide the June data on time. Genesis will address the 19 items of load with wattage variances with the council's database manager. Genesis will reiterate timeliness of data provision is required.	01/02/2021	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
As above		

CONCLUSION

TDC switched to Genesis on 01/03/2020. Previously they were audited in conjunction with the NZTA lights. These are two separate customers with different retailers therefore this audit is of the TDC lights only.

Network Tasman hold an access database for the Tasman DC unmetered streetlights. Fault, maintenance and upgrade work is conducted by PowerTech and the database is managed by Network Tasman. New streetlight connections are undertaken by Delta.

Genesis reconciles the TDC DUML load using the CST profile. A monthly wattage report is provided to Genesis from the database by Network Tasman. Genesis derives the hours of operation information using a data logger.

The field audit found that database accuracy was within the allowable +/- 5% threshold.

The audit found four non-compliances relating to minor inaccuracies in the database and a difference in the number of lights and volume submitted for one ICP. I have made three recommendations for improvements in the database fields.

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

PARTICIPANT RESPONSE

Genesis will continue to work with the Network who maintains the database for the council to ensure the information is managed efficiently.