ELECTRICITY INDUSTRY PARTICIPATION CODE
DISTRIBUTED UNMETERED LOAD AUDIT REPORT

VERITEK

For

TASMAN DISTRICT COUNCIL
AND GENESIS ENERGY LIMITED
NZBN: 9429037706609

Prepared by: Rebecca Elliot

Date audit commenced: 20 September 2022

Date audit report completed: 12 October 2022

Audit report due date: 12 October 2022

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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.

Network Tasman holds 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 and Powertech.

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 30th September 2022 against the submission totals supplied by Genesis for August 2022 and found that there was a difference in the number of lights and volume submitted for all of the ICPs. This was investigated and found that the database reporting supplied to Genesis included historical changes causing the light count and kW value to be overstated. Genesis is working with Network Tasman to correct the reporting going forward and revisions will be submitted. The discrepancy results in an estimated over submission of 17,862 kWh for August 2022 and an annualised over submission of 214,344 kWh.

The field audit was undertaken on the 2nd and 3rd October 2022, found that the database accuracy was not confirmed as accurate with a 95% level of confidence resulting in an estimated annual over submission of 27,300 kWh.

The audit found four non-compliances. I have repeated four recommendations for improvements in the database fields.

The future risk rating of 26 indicates that the next audit be completed in three months. I have considered this in conjunction with Genesis' comments, the late return of the draft report and recommend the next audit be in 11 months making this due in September 2023.

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	Estimated over submission of 214,344 kWh per annum due to discrepancies between data extract and volume submitted. Database accuracy is outside of the allowable threshold resulting in an estimated over submission of 27,300 kWh per annum. Incorrect wattages for 20 items of load resulting in an estimated minor over submission of 87.12 kWh per annum.	Weak	High	9	Identified
Location of load	2.3	11(2)(b) of Schedule 15.3	137 items of load with insufficient details to locate these.	Moderate	Low	2	Identified
Database accuracy	3.1	15.2 and 15.37B(b)	Incorrect wattages for 20 items of load resulting in an estimated minor over submission of 87.12 kWh per annum. Database accuracy is outside of the allowable threshold resulting in an estimated over submission of 27,300 kWh per annum.	Weak	Medium	6	Identified
Volume information accuracy	3.2	15.2 and 15.37B(c)	Estimated over submission of 214,344 kWh per annum due to discrepancies between data extract	Weak	High	9	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			and volume submitted. Database accuracy is outside of the allowable threshold resulting in an estimated over submission of 27,300 kWh per annum. Incorrect wattages for 20 items of load resulting in an estimated minor over submission of 87.12 kWh per annum.				
Future Risk Rating						26	

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	Location of each item of load.	Add GPS co-ordinates to items of load with insufficient information.
			Review the "Area" field to contain "area" details only and not street level detail.
Database Accuracy	3.1	Confirm wattages for new connections with contractor.	The wattage for 44 new connections has been advised as 13W, however the field audit identified this was not correct.
		The database records 3,181 LED lights as "LED" lights only. There are 61 different LED wattages recorded.	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

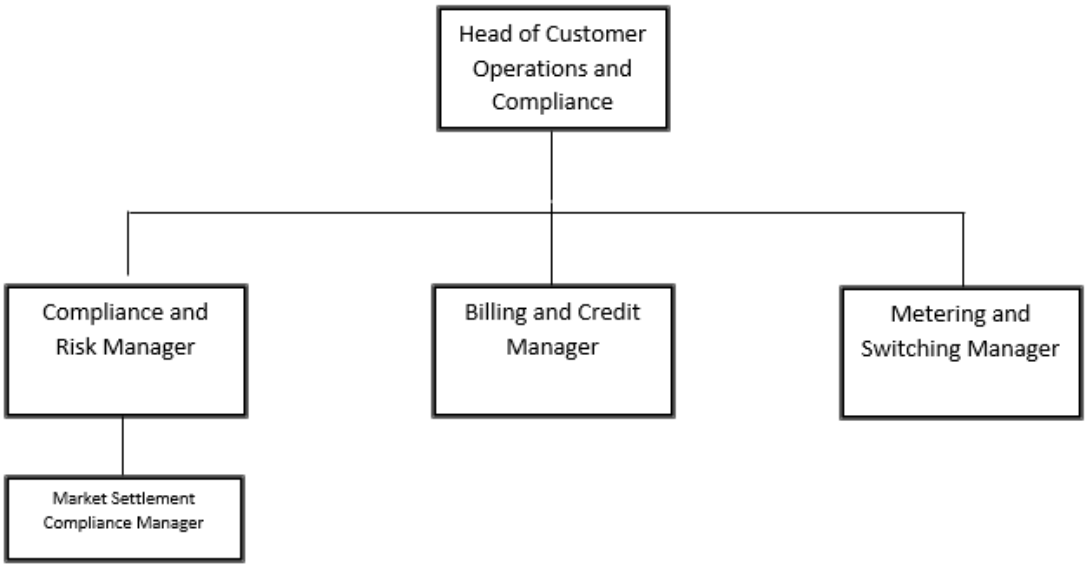
The Electricity Authority's website was reviewed to identify any exemptions relevant to the scope of this audit.

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

Name	Company	Role
Rebecca Elliot	Veritek Limited	Lead Auditor
Claire Stanley	Veritek Limited	Supporting Auditor

Other personnel assisting in this audit were:

Name	Title	Company
Kerryn Little	Easement Officer	Network Tasman
Nirav Teli	DUML Data & Stakeholder Lead	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.

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)
0000090005NTAE5	TDC STREETLIGHTING KIKIWA	KIK0111	CST	70	2,638
0000090003NTB6A	TDC STREETLIGHTING MOTUEKA	STK0661	CST	857	35,109
0000090004NT6A0	TDC STREETLIGHTING MOTUPIPI	STK0661	CST	258	9,034
0000090006NT625	TDC STREETLIGHTING MURCHISON	MCH0111	CST	46	1,791
0000090002NT72F	TDC STREETLIGHTING STOKE	STK0331	CST	2,352	110,809
TOTAL				**3,583**	**159,381**

1.7. Authorisation Received

All information was provided directly by Genesis or Network Tasman.

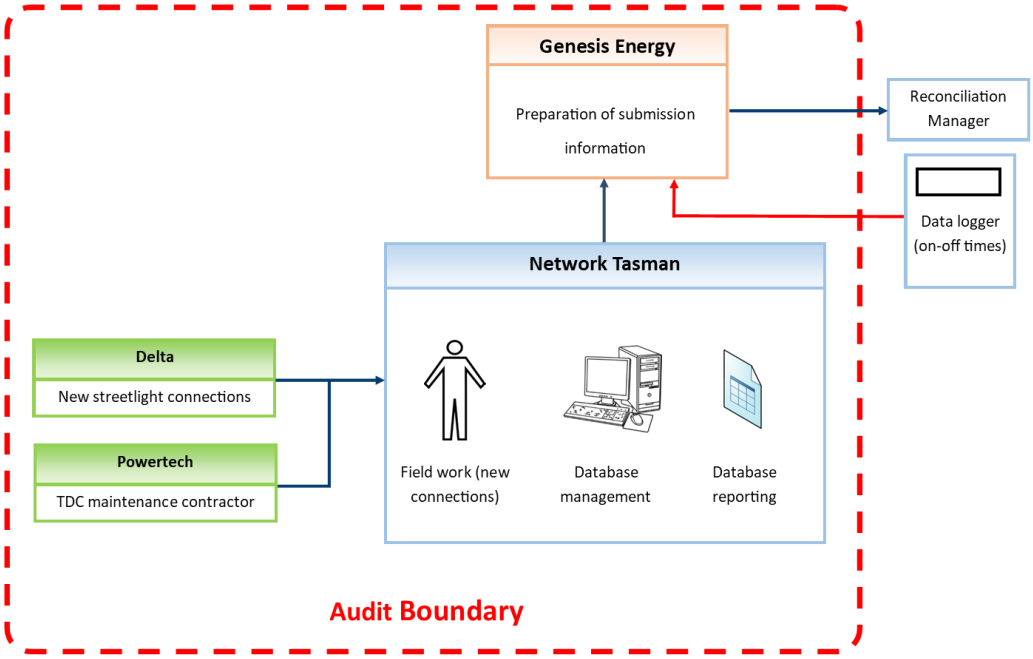
1.8. Scope of Audit

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 and Powertech.

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 275 items of load on 2nd and 3rd October 2022.

1.9. Summary of previous audit

The previous audit of this database was undertaken by Steve Woods of Veritek Limited in September 2020. 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	Estimated over submission of 83,760 kWh per annum due to discrepancies between data extract and volume submitted.	Still existing
			The data used for submission does not track changes at a daily basis and is provided as a snapshot.	Cleared
			Incorrect wattages for 20 items of load resulting in an estimated minor over submission of 87.12 kWh per annum.	Still existing
Location of load	2.3	11(2)(b) of Schedule 15.3	109 items of load with insufficient details to locate these.	Still existing
All load recorded in database	2.5	11(2A) of Schedule 15.3	Two additional items of load found in the field of 287 items of load sampled.	Cleared
Database accuracy	3.1	15.2 and 15.37B(b)	Incorrect wattages for 20 items of load resulting in an estimated minor over submission of 87.12 kWh per annum.	Still existing
Volume information accuracy	3.2	15.2 and 15.37B(c)	Estimated over submission of 83,760 kWh per annum due to discrepancies between data extract and volume submitted.	Still existing
			The data used for submission does not track changes at a daily basis and is provided as a snapshot.	Cleared
			Incorrect wattages for 20 items of load resulting in an estimated minor over submission of 87.12 kWh per annum.	Still existing

Table of recommendations

Subject	Recommendation	Status
Location of each item of load	Add GPS co-ordinates to items of load with insufficient information.	Still existing
	Review the "Area" field to contain "area" details only and not street level detail.	Still existing
Database Accuracy	The wattage for 38 new connections has been advised as 13W, however the field audit identified this was not correct.	Still existing
	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.

The extract provided by Network Tasman now includes changes at a daily level.

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 30th September 2022 against the estimated submission totals supplied by Genesis for August 2022 and found that there was a difference in the number of lights and volume submitted for all of the ICPs, as detailed in the table below:

ICPs	Fittings number from August submission	Fittings number from August database extract	Difference	kWh value submitted	Calculated kWh value from database	kWh difference
0000090005NTAE5	82	70	-12	1,390	1,113	- 277.10
0000090003NTB6A	931	861	-70	18,574	14,919	- 3,655
0000090004NT6A0	301	258	-43	5,784	3,799	- 1,949
0000090006NT625	73	46	-27	2,010	756	-1,254
0000090002NT72F	2,540	2,410	-130	60,260	49,534	- 10,725
Totals	**3,927**	**3,645**	**-282**	**87,982**	**70,1210**	**- 17,862**

This was investigated and found that the database reporting supplied to Genesis included historical changes causing the light count and kW value to be overstated. Genesis is working with Network Tasman to correct the reporting going forward and revisions will be submitted. The discrepancy results in an estimated over submission of 17,862 kWh for August 2022 and an annualised over submission of 214,344 kWh.

The field audit found that the database accuracy was not confirmed as accurate with a 95% level of confidence resulting in an estimated annual over submission of 27,300 kWh as detailed in **section 3.1**.

A check of the wattages applied identified 20 lights with the incorrect wattage applied resulting in an estimated very minor over submission of 87.12 kWh per annum as detailed in **section 3.1**.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.1 With: Clause 11(1) of Schedule 15.3 From: 04-Feb-22 To: 20-Sep-22	Estimated over submission of 214,344 kWh per annum due to discrepancies between data extract and volume submitted. Database accuracy is outside of the allowable threshold resulting in an estimated under submission of 27,300 kWh per annum. Incorrect wattages for 20 items of load resulting in an estimated minor over submission of 87.12 kWh per annum. Potential impact: High Actual impact: High Audit history: Multiple times previously Controls: Weak Breach risk rating: 9
Audit risk rating	**Rationale for audit risk rating**
High	The controls are recorded as weak as the information provided for submission has resulted in a large discrepancy. Network Tasman is working with Genesis to ensure accurate information is available for submission. The impact is assessed to be high due to the impact on submission.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis has investigated this reason for over submission and found that the dataset provided to Genesis was different to the one provided to the auditor. The difference was due the way Network Tasman extracted the data. It was found that the dataset provided to the auditor was more reliable and hence Genesis has revised submission for Aug-22 based on the dataset provided by the auditor. (Screenshot of volumes sent for revision attached. This was get picked up when it gets to the revision month) Genesis will bring it the discrepancies to TDC's attention with the intention that they rectify these	01/08/2023	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis continues to work with the council to increase accuracy levels in their database.	01/08/2023	

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 an ICP was recorded against each item of load.

Audit commentary

All items of load have an ICP recorded against them.

Audit outcome

Compliant

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

Code reference

Clause 11(2)(b) of Schedule 15.3

Code related audit information

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

Audit observation

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

Audit commentary

The database contains fields for light ID, location description, area and GPS co-ordinates. All but 584 items of load in the database have GPS co-ordinates recorded. Of these all but 137 items of load have sufficient details to locate them, these lamps have a lot number and street name recorded, they have not been updated with the street number or GPS co-ordinates. This is recorded as a non-compliance below.

GPS co-ordinates are not provided when the lamp is installed, they are only provided when a change is made to the lamp. I repeat the recommendation from the previous audits 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 bring this to TDC's attention with the intention that they have the database updated with required details.	Identified

The previous audit identified that 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 repeat the previous recommendation 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 bring this to TDC's attention with the intention that they have the database updated with required details.	Identified

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.3 With: Clause 11(2)(b) of Schedule 15.3 From: 04-Feb-22 To: 20-Sep-22	137 items of load with insufficient details to locate these. Potential impact: Low Actual impact: Low Audit history: Three times previously Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as moderate as the processes in place do not capture the GPS co-ordinates for a new connection. 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 bring this to TDC's attention with the intention that they have the database updated with required details.	01/08/2023	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis will continue to work with the council to help them increase database accuracy.	01/08/2023	

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

A lamp type, lamp size and lamp wattage including an allowance for ballast is recorded for each item of load in the database.

The accuracy of these 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 275 items of load on 2nd and 3rd October 2022.

Audit commentary

The field audit findings for the sample of lamps was accurate with the exception of the streets detailed in the table below:

Street	Database count	Field count	Light count difference	Wattage recorded incorrectly	Comments
Hickmott Place	7	6	-1	3	1 x 70W HPS recorded in the database but not located in the field 1 x 35W LED recorded in the database but 1 x 36W LED located in the field 2 x 72W LED recorded in the database but 2 x 36W LED located in the field
Talisman Heights	10	10		7	7 x 38W LED recorded in the database but 7 x 20W LED located in the field
Summerfield Boulevard	32	32		4	4 x 13W LED recorded in the database but 4 x 28W LED located in the field
Grand Total	**3645**	**3644**	**-1**	**14**	

This clause relates to lights in the field that are not recorded in the database. The field audit did not find any additional lights in the field of the 275 items of load sampled.

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.

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

A database extract was provided, 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, and 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	275 items of load were checked.

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.

Audit commentary

Field audit findings

A field audit was conducted of a statistical sample of 275 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	96.0	Wattage from survey is lower than the database wattage by 4.0%
R_L	89.8	With a 95% level of confidence, it can be concluded that the error could be between -10.2% and +0.3%
R_H	99.7	

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 C (detailed below) applies.

The conclusion from Scenario C is that the variability of the sample results across the strata means that the true wattage (installed in the field) could be between 10.2% and 0.3% lower than the wattage recorded in the DUML database. Non-compliance is recorded because the potential error is greater than 5.0%.

In absolute terms the installed capacity is estimated to be 6 kW lower than the database indicates.

There is a 95% level of confidence that the installed capacity is between 16 kW to 1 kW lower than the database.

In absolute terms, total annual consumption is estimated to be 27,300 kWh lower than the DUML database indicates.

There is a 95% level of confidence that the annual consumption is between 70,100 kWh to 2,400 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. As reported in the previous audit, the database contained 20 wattage discrepancies. The same lamps 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	-28
Fluor (2x60W)	1	132	143	-11

Metal Halide (150W)	2	167	168	-2
Metal Halide (70W)	8	86	83	24
SON (50W)	1	50	61	11
			TOTAL	20.4

This will result in a very minor estimated annual over submission of 87.12 kWh per annum (based on 4,271 burn hours). This is recorded as non-compliance below.

The database records 3,181 LED lights as "LED" lights only. There are 61 different LED wattages recorded. Lamp descriptions will be updated as time and resource allows. I repeat the recommendation from the previous audits 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 bring this to TDC's attention with the intention that they have the database updated with required details.	Identified

Three LED lamps had an incorrect lamp size value recorded, all other details for the LED lamps appeared to be correct:

Lamp Total Watts	Lamp Size
35	3535
265	265265
98	9898

Change management process findings

As previously reported the 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. Network Tasman are now providing reporting that includes changes in the monthly report to Genesis.

The new connection process follows the same process as changes made in the field. This work is undertaken by Delta and Powertech. 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 field audit identified four lamps in a new subdivision that had 13W LED recorded in the database, however the lamps were labelled with a higher wattage; these should be checked with the contractor to confirm the correct wattage and update the database. The database has 44 lamps recorded as 13W LED, I repeat the recommendation from the previous audit to obtain the paperwork for all of the lamps

identified as 13W LED new connections to confirm the correct lamp wattage installed in the field and update the database.

Recommendation	Description	Audited party comment	Remedial action
Confirm wattages for new connections with contractor	The wattage for 44 new connections has been advised as 13W, however the field audit identified this was not correct.	Genesis has reviewed auditors finding and will advise of the discrepancy with the intent that TDC makes every effort to ensure the exceptions are rectified.	Identified

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: 04-Feb-22 To: 20-Sep-22	Incorrect wattages for 20 items of load resulting in an estimated minor over submission of 87.12 kWh per annum. Database accuracy is outside of the allowable threshold resulting in an estimated over submission of 27,300 kWh per annum. Potential impact: Medium Actual impact: Medium Audit history: Multiple times previously Controls: Weak Breach risk rating: 6
Audit risk rating	**Rationale for audit risk rating**
Medium	The controls are recorded as weak as the information provided for submission has resulted in a large discrepancy. TDC is working with Genesis to ensure accurate information is available for submission. The impact is assessed to be medium due to the impact on submission.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis is in discussion with TDC to gain a database from them. Once received Genesis will review the database and notify TDC of the asset discrepancies. Genesis relies on TDC to accurately maintain its database.	01/08/2023	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis will continue to work with the council to help them increase database accuracy.	01/08/2023	

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. 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 30th September 2022 against the estimated submission totals supplied by Genesis for August 2022 and found that there was a difference in the number of lights and volume submitted for all of the ICPs, as detailed in the table below:

ICPs	Fittings number from August submission	Fittings number from August database extract	Difference	kWh value submitted	Calculated kWh value from database	kWh difference
0000090005NTAE5	82	70	-12	1,390	1,113	- 277.10
0000090003NTB6A	931	861	-70	18,574	14,919	- 3,655
0000090004NT6A0	301	258	-43	5,784	3,799	- 1,949
0000090006NT625	73	46	-27	2,010	756	-1,254
0000090002NT72F	2,540	2,410	-130	60,260	49,534	- 10,725
Totals	**3,927**	**3,645**	**-282**	**87,982**	**70,1210**	**- 17,862**

This was investigated and found that the database reporting supplied to Genesis included historical changes causing the light count and kW value to be overstated. Genesis is working with Network Tasman to correct the reporting going forward and revisions will be submitted. The discrepancy results in an estimated over submission of 17,862 kWh for August 2022 and an annualised over submission of 214,344 kWh.

The field audit found that the database accuracy was not confirmed as accurate with a 95% level of confidence resulting in an estimated annual over submission of 27,300 kWh as detailed in **section 3.1**.

A check of the wattages applied identified 20 lights with the incorrect wattage applied resulting in an estimated very minor over submission of 87.12 kWh per annum as detailed in **section 3.1**.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.2 With: Clause 15.2 and 15.37B(c) From: 04-Feb-22 To: 20-Sep-22	Estimated over submission of 214,344 kWh per annum due to discrepancies between data extract and volume submitted. Database accuracy is outside of the allowable threshold resulting in an estimated over submission of 27,300 kWh per annum. Incorrect wattages for 20 items of load resulting in an estimated minor over submission of 87.12 kWh per annum. Potential impact: High Actual impact: High Audit history: Multiple times previously Controls: Weak Breach risk rating: 9
Audit risk rating	**Rationale for audit risk rating**
High	The controls are recorded as weak as the information provided for submission has resulted in a large discrepancy. TDC is working with Genesis to ensure accurate information is available for submission. The impact is assessed to be high due to the impact on submission.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis has investigated this reason for over submission and found that the dataset provided to Genesis was different to the one provided to the auditor. The difference was due the way Network Tasman extracted the data. It was found that the dataset provided to the auditor was more reliable and hence Genesis has revised submission for Aug-22 based on the dataset provided by the auditor. (Screenshot of volumes sent for revision attached. This was get picked up when it gets to the revision month) Genesis will bring it the discrepancies to TDC's attention with the intention that they rectify these	01/08/2023	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis continues to work with the council to increase accuracy levels in their database.	01/08/2023	

CONCLUSION

Network Tasman holds 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 and Powertech.

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 30th September 2022 against the submission totals supplied by Genesis for August 2022 and found that there was a difference in the number of lights and volume submitted for all of the ICPs. This was investigated and found that the database reporting supplied to Genesis included historical changes causing the light count and kW value to be overstated. Genesis is working with Network Tasman to correct the reporting going forward and revisions will be submitted. The discrepancy results in an estimated over submission of 17,862 kWh for August 2022 and an annualised over submission of 214,344 kWh. .

The field audit was undertaken on the 2nd and 3rd October 2022, found that the database accuracy was not confirmed as accurate with a 95% level of confidence resulting in an estimated annual over submission of 27,300 kWh .

The audit found four non-compliances. I have repeated four recommendations for improvements in the database fields.

The future risk rating of 26 indicates that the next audit be completed in three months. I have considered this in conjunction with Genesis' comments, the late return of the draft report and recommend the next audit be in 11 months making this due in September 2023.

PARTICIPANT RESPONSE

Genesis continues to build on their relationship with the council. We currently receive database from Network Tasman and are in discussion with TDC to provide a database they hold so we can compare the two and report any exceptions we are able to find.