

**ELECTRICITY INDUSTRY PARTICIPATION CODE
DISTRIBUTED UNMETERED LOAD AUDIT REPORT**

For

**SOUTHLAND DISTRICT COUNCIL AND
GENESIS ENERGY**

NZBN: 9429037706609

Prepared by: Rebecca Elliot

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Date audit report completed: 1 February 2024

Audit report due date: 01-Mar-24

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EXECUTIVE SUMMARY

This audit of the **Southland District Council (SDC)** 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 audit includes all streetlights for SDC and Waka Kotahi lights in the area as recorded in RAMM.

The RAMM database is managed by SDC and is remotely hosted by thinkproject New Zealand Limited. The field work is carried out by NES. Pocket RAMM is used in the field to issue work and record changes in the field into RAMM.

I checked the submission calculation provided by Genesis for November 2023 and confirmed it was correct.

The new connection process was discussed. SDC add lights once they are vested to Council. If the developer has requested the lights to be connected and they are not vested the volume is not reconciled until they are vested. The electrical connection of streetlights is not discussed in the PowerNet Distributor audit, so it is unclear what process is in place to ensure that the new streetlight connections include the trader accepting responsibility for the load. I recommend in the report that Genesis work with SDC and PowerNet to review this process.

Database accuracy is described as follows:

Result	Percentage	Comments
The point estimate of R	103.5	Wattage from survey is higher than the database wattage by 3.5%
R _L	100.6	With a 95% level of confidence, it can be concluded that the error could be between +0.6% and + 9.8%.
R _H	109.8	

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 0.6% and 9.8% higher than the wattage recorded in the DUML database.

In absolute terms the installed capacity is estimated to be the 5 kWh higher than the database indicates.

There is a 95% level of confidence that the installed capacity is between 1 kW and 15 kW higher than the database.

In absolute terms, total annual consumption is estimated to be 22,900 kWh higher than the DUML database indicates.

There is a 95% level of confidence that the annual consumption is between 3,600 kWh p.a. and 63,300 kWh p.a. higher than the database indicates.

The audit found three non-compliances and makes three recommendations. The database is well managed overall and were it not for a small number of errors found on the Waka Kotahi lights the database would have been within the allowable accuracy threshold. I have considered this in conjunction with Genesis’s responses and 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	In absolute terms, total annual consumption is estimated to be 22,900 kWh lower than the DUML database indicates.	Moderate	Medium	4	Identified
Database accuracy	3.1	15.2 and 15.37B(b)	In absolute terms, total annual consumption is estimated to be 22,900 kWh lower than the DUML database indicates. 19 items of load recorded with an insufficient detail to confirm the correct wattage has been applied.	Moderate	Medium	4	Identified
Volume information accuracy	3.2	15.2 and 15.37B(c)	In absolute terms, total annual consumption is estimated to be 22,900 kWh lower than the DUML database indicates.	Moderate	Medium	4	Identified
Future Risk Rating						12	

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

RECOMMENDATIONS

Subject	Section	Recommendation
Ballast	3.1	Recommend that ballast value is recorded separately in the relevant field.

ICP allocation		Genesis to liaise with Powernet and SDC to decommission ICP 0000302001HEF6B and allocate these items of load to ICP 0008801024TPF77.
New streetlight connections		Recommend that Genesis work with SDC and Powernet to review the new streetlight connection process.
Festive lights		Recommend that all festive lighting is recorded in RAMM and are only included in the monthly wattage report when they are electrically connected.

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

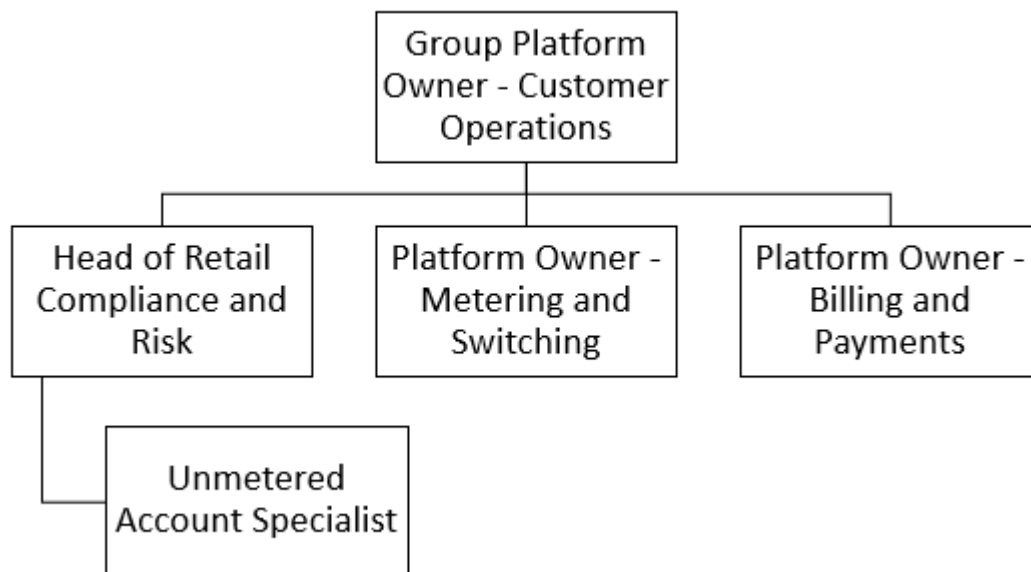
The Electricity Authority's website was reviewed to identify any exemptions relevant to the scope of this audit.

Audit commentary

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

1.2. Structure of Organisation

Genesis provided a copy of their organisational structure:



1.3. Persons involved in this audit

Auditor:

Name	Company	Role
Rebecca Elliot	Veritek Limited	Auditor

Other personnel assisting in this audit were:

Name	Title	Company
Ben Wheelan	Roading Engineer	Southland District Council
Michael Duggan	Roading Asset Analyst Engineer	Southland District Council
Alysha Majury	Unmetered Account Specialist	Genesis Energy

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.

Pocket RAMM is used in the field by NES.

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	Number of items of load	Database wattage (watts)
0000302001HEF6B	HERITAGE ESTATE	NMA0331	77	1,667
0008801021TP238	SDC LIGHTS - URBAN EDENDALE	EDN0331	270	10,807
0008801023TP2BD	SDC LIGHTS – GORE URBAN	GOR0331	168	10,398
0008801024TPF77	SDC LIGHTS - URBAN NORTH MAKAREWA	NMA0331	2,273	96,548
0008801031TP895	SDC LIGHTS – RURAL EDENDALE	EDN0331	52	3,592
0008801032TP455	SDC LIGHTS – RURAL INVERCARGILL	INV0331	122	7,789
0008801033TP810	SDC LIGHTS – GORE RURAL	GOR0331	79	4,134
0008801034TP5DA	SDC LIGHTS - RURAL NORTH MAKAREWA	NMA0331	268	17,944
Total			3,353	15,2879

ICP 0008801022TPEF8 (NSP INV0331) was included as an ICP for this DUMML database back in 2018 and was for the Wallacetown lights. It is recorded on the registry as status “inactive - reconciled elsewhere” and is recorded as being reconciled against ICP 0008801024TPF77 (NMA0331) and has remained with Meridian. Powernet requested that this ICP be retained in case of the network reconfiguring the load to be fed from NSP INV0331.

As detailed in **section 3.1**, the Heritage Estate embedded network has been decommissioned and the ICPs have been returned to Powernet, therefore ICP 0000302001HEF6B could be decommissioned and the load assigned to ICP 0008801024TPF77.

1.7. Authorisation Received

All information was provided directly by Genesis and SDC.

1.8. Scope of Audit

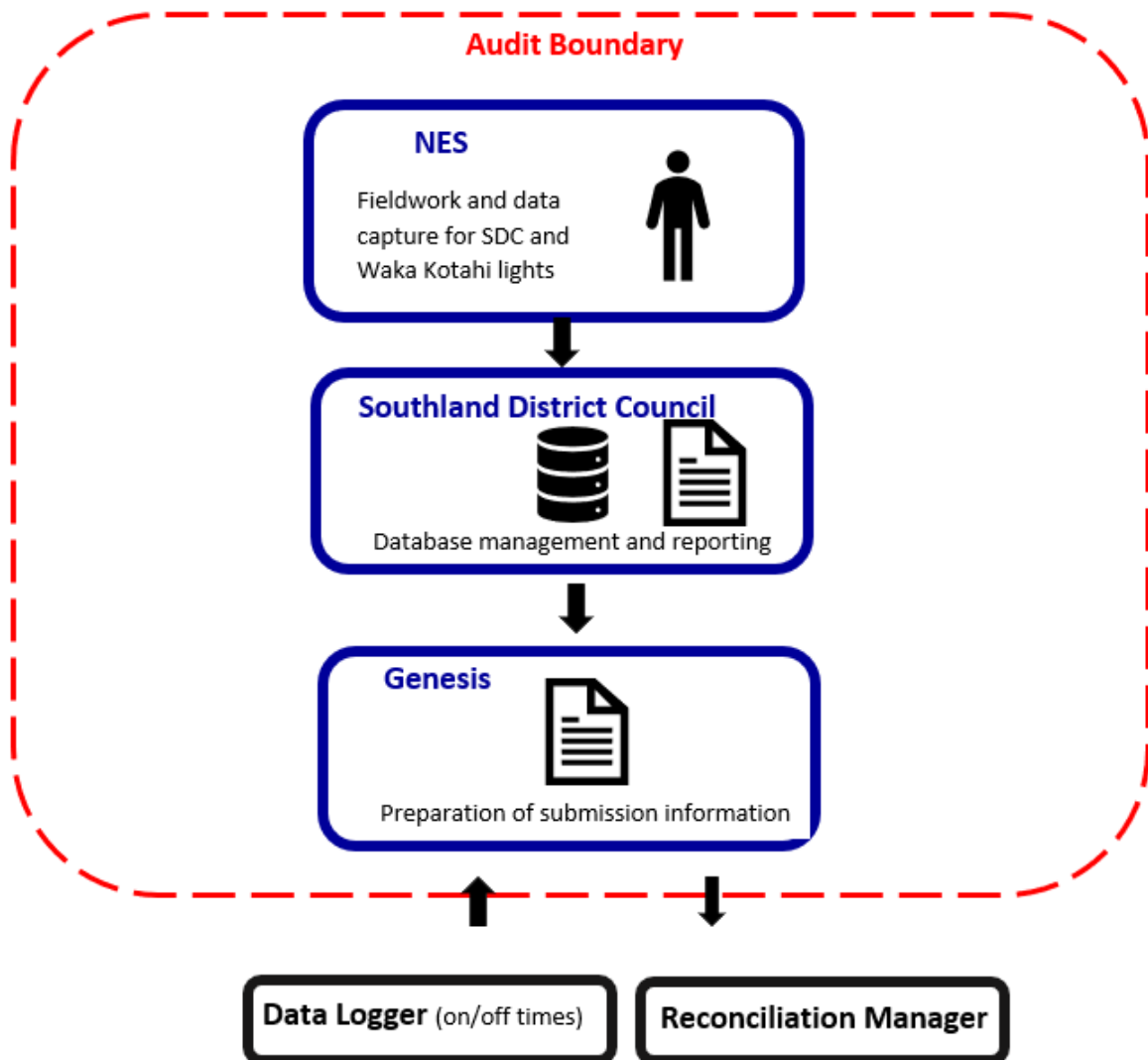
This audit of the SDC DUMML database and processes was conducted at the request of Genesis, in accordance with clause 15.37B. The purpose of this audit is to verify that the volume information is being calculated accurately, and that profiles have been correctly applied.

The audit was conducted in accordance with the audit guidelines for DUMML audits version 1.1.

This audit includes all streetlights for SDC load as recorded in RAMM.

The RAMM database is managed by SDC and is remotely hosted by thinkproject New Zealand Limited. The field work is carried out by NES for both SDC and Waka Kotahi lights. Pocket RAMM is used in the field to issue work and record changes in the field into RAMM.

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 audit was conducted in accordance with the audit guidelines for DUML audits version 1.1.

The field audit was undertaken of 231 items of load on 9 and 10 January 2024.

1.9. Summary of previous audit

The previous audit was completed in March 2022 by Steve Woods of Veritek Limited. Two non-compliances were identified, and no recommendations were made. The statuses of the non-compliances are detailed below.

Table of non-compliances

Subject	Section	Clause	Non-compliance	Status
All load recorded in database	2.5	11(2A) of Schedule 15.3	Three additional lights found in the field audit sample.	Cleared
Database accuracy	3.1	15.2 and 15.37B(b)	One lamp with no ballast applied resulting in very minor under submission.	Still existing for different reasons

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 3 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 within the required timeframe.

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 processes for calculation of consumption was examined.

Audit commentary

Genesis reconciles this DUML load using the SST profile. Submissions are based on the database information, with on and off times derived from data logger information. I reviewed the submission information for November 2023 and confirmed that the methodology is correct. The database extract provided for the audit has 340 fewer lights than that recorded in the monthly wattage report to Genesis. This is due to a SQL scripting change that accidentally excluded 340 lights in the audit extract. This was corrected as soon as it was discovered and didn't affect submission accuracy as it was corrected before the next monthly wattage report was provided.

The field audit found that the database accuracy was not fall within the +/-5% threshold resulting in an estimated under submission of 22,900 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: 17-Nov-21 To: 09-Nov-23	In absolute terms, total annual consumption is estimated to be 22,900 kWh lower than the DUML database indicates. Potential impact: Medium Actual impact: Medium Audit history: None Controls: Moderate Breach risk rating: 4		
Audit risk rating	Rationale for audit risk rating		
Medium	The controls are rated as moderate, as there is room for improvement for the adding of new streetlights. The impact is assessed to be medium due to the potential over submission indicated from the field audit findings.		
Actions taken to resolve the issue		Completion date	Remedial action status
Genesis will continue to work with SDC regarding their database accuracy which was brought to their attention		Continuous improvement	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Genesis will continue to work with SDC regarding their database accuracy which was brought to their attention		Continuous improvement	

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.

Lights for Stewart Island are recorded in the database but are excluded from this audit, as they are not connected to the grid.

The accuracy of the ICP assignment is discussed in **section 3.1**.

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 examined to confirm the location is recorded for all items of load.

Audit commentary

The database contains fields for the nearest street address, distance from the end of the road and GPS co-ordinates. All but five items of load have GPS coordinates for each item of load. These are readily locatable as all have the distance from the end of road recorded.

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 they contained a field for lamp type and wattage capacity and included any ballast or gear wattage.

Audit commentary

A lamp type, lamp type description and lamp wattage are recorded for all lamps. The lamp ballast is not recorded separately. I recommend in **section 3.1** that this is recorded separately for clarity. The accuracy of lamp wattage and ballast 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 231 items of load on 9 and 10 January 2024. The total population was divided into five geographical strata.

Audit commentary

The field audit discrepancy findings are detailed in the table below:

Discrepancy	Quantity
Lights in the database not in the field	0
Lights in the field, not in the database	0
Incorrect wattage	14

No additional lights were found in the field. The accuracy of the database 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 database was checked for audit trails.

Audit commentary

RAMM has a complete audit trail of all additions and changes to the database information.

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 process for tracking of changes in the database was examined.

Audit commentary

The RAMM database functionality achieves compliance with the code.

Audit outcome

Compliant

3. ACCURACY OF DUMI 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 DUMI database is complete and accurate.

Audit observation

A database extract was provided, and I assessed the accuracy of this by using the DUMI Statistical Sampling Guideline. The table below shows the survey plan.

Plan Item	Comments
Area of interest	Southland District Council area
Strata	The database contains items of load for the Southland District Council. The processes for the management of SDC of load are the same, but I decided to place the items of load into five strata of a similar size as follows: <ol style="list-style-type: none"> 1. Five Rivers/Waikaia/ Riverton, 2. Te Anau, 3. Totoes/Waihopi /Te Tipua/Tuatapere, 4. Wallace/Wallacetown, 5. Winton.
Area units	I created a pivot table of the roads in each area, and I used a random number generator in a spreadsheet to select a total of 59 sub-units.
Total items of load	231 items of load recorded in the database were selected.

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

The accuracy of the ICP assignment was examined.

The process to manage changes made in the field being updated in the database was examined.

Audit commentary

Database accuracy based on the field audit

A field audit was conducted of a statistical sample of 231 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	103.5	Wattage from survey is higher than the database wattage by 3.5%
R _L	100.6	With a 95% level of confidence, it can be concluded that the error could be between +0.6% and + 9.8%.
R _H	109.8	

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 0.6% and 9.8% higher than the wattage recorded in the DUML database.

In absolute terms the installed capacity is estimated to be the 5 kWh higher than the database indicates.

There is a 95% level of confidence that the installed capacity is between 1 kW and 15 kW higher than the database.

In absolute terms, total annual consumption is estimated to be 22,900 kWh higher than the DUML database indicates.

There is a 95% level of confidence that the annual consumption is between 3,600 kWh p.a. and 63,300 kWh p.a. higher 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 %

Lamp description and capacity accuracy

The database was checked against the published standardised wattage table, and manufacturer’s specifications where available and found:

- the ballast figure is not recorded, and the total lamp wattage is recorded in the lamp wattage field; all lamps with a ballast wattage value had the correct total wattage so this has no impact on submission accuracy, however I recommend below that this is separated for clarity, and
- 19 LED lamps are recorded with an unknown lamp type; this is required to confirm that the correct lamp wattage has been applied and is recorded as non-compliance below.

Recommendation	Description	Audited party comment	Remedial action
Ballast	Recommend that ballast value is recorded separately in the relevant field.	SDC are aware of the recommendation and Genesis will continue to work with SDC with the improvements to their data	Identified

ICP Allocation

The Heritage Estate embedded network has been decommissioned and the ICPs have been returned to Powernet, therefore ICP 0000302001HEF6B could be decommissioned and the load assigned to ICP 0008801024TPF77. I have raised this as a recommendation for visibility.

Recommendation	Description	Audited party comment	Remedial action
ICP allocation	Genesis to liaise with Powernet and SDC to decommission ICP 0000302001HEF6B and allocate these items of load to ICP 0008801024TPF77.	Genesis will work with SDC with the recommendation	Identified

ICP 0008801022TPEF8 (NSP INV0331) was included as an ICP for this DUMML database back in 2018 and was for the Wallacetown lights. It is recorded on the registry as status "inactive - reconciled elsewhere" and is recorded as being reconciled against ICP 0008801024TPF77 (NMA0331) and has remained with Meridian. Powernet requested that this ICP be retained in case of the network reconfiguring the load to be fed from NSP INV0331.

Change Management

The processes were reviewed for new lamp connections and the tracking of load changes due to faults and maintenance.

New connection, fault, and maintenance work is completed by NES for both SDC and Waka Kotahi. Pocket RAMM is used in the field to issue work and record changes from the field into RAMM.

There are outage patrols in place for all the lights, which are carried out six monthly by NES.

The new connection process was discussed. SDC add lights once they are vested to Council. If the developer has requested the lights to be connected and they are not vested the volume is not reconciled until they are vested. The electrical connection of streetlights is not discussed in the PowerNet Distributor audit, so it is unclear what process is in place to ensure that the new streetlight connections include the trader accepting responsibility for the load. I recommend that Genesis work with SDC and PowerNet to review this process.

Recommendation	Description	Audited party comment	Remedial action
New streetlight connections	Recommend that Genesis work with SDC and Powernet to review the new streetlight connection process.	Genesis will review this process with SDC and Powernet to ensure a robust process is in place	Investigating

The LED roll out is complete and any remaining SDC owned HPS or similar lights will be replaced and updated via the maintenance process.

Festive lighting

Christmas lights are installed on the unmetered circuits. The festive lighting is not recorded in the RAMM database except for the Balfour Christmas lights that are on all year. There is work in progress to be able to switch the Balfour Christmas lights off. The other SDC festive lights are added in the monthly report when electrically connected. I recommend that all festive lighting is recorded in RAMM and are only included in the monthly wattage report when they are electrically connected.

Recommendation	Description	Audited party comment	Remedial action
Festive lights	Recommend that all festive lighting is recorded in RAMM and are only included in the monthly wattage report when they are electrically connected.	SDC have been made aware and Genesis will continue to work with SDC to improve accuracy in their system	Identified

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 3.1 With: Clause 15.2 and 15.37B(b) From: 17-Nov-21 To: 09-Nov-23	In absolute terms, total annual consumption is estimated to be 22,900 kWh lower than the DUML database indicates. 19 items of load recorded with insufficient detail to confirm the correct wattage has been applied. Potential impact: Medium Actual impact: Medium Audit history: Multiple times Controls: Moderate Breach risk rating: 4		
Audit risk rating	Rationale for audit risk rating		
Medium	The controls are rated as moderate, as there is room for improvement for the adding of new streetlights. The impact is assessed to be medium due to the potential over submission indicated from the field audit findings.		
Actions taken to resolve the issue		Completion date	Remedial action status
Genesis will continue to work with SDC regarding their database accuracy which was brought to their attention		Continuous improvement	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Genesis will continue to work with SDC regarding their database accuracy which was brought to their attention		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 the ICP has the correct profile and submission flag, and
- checking the database extract, against the submitted figure to confirm accuracy.

Audit commentary

Genesis reconciles this DUML load using the SST profile. Submissions are based on the database information, with on and off times derived from data logger information. I reviewed the submission information for November 2023 and confirmed that the methodology is correct. The database extract provided for the audit has 340 fewer lights than that recorded in the monthly wattage report to Genesis. This is due to a SQL scripting change that accidentally excluded 340 lights in the audit extract. This was corrected as soon as it was discovered and didn't affect submission accuracy as it was corrected before the next monthly wattage report was provided.

The field audit found that the database accuracy was not fall within the +/-5% threshold resulting in an estimated under submission of 22,900 kWh per annum as detailed in **section 3.1**.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 3.2 With: 15.2 & 15.37B(c) From: 17-Nov-21 To: 09-Nov-23	In absolute terms, total annual consumption is estimated to be 22,900 kWh lower than the DUMML database indicates. Potential impact: Medium Actual impact: Medium Audit history: None Controls: Moderate Breach risk rating: 4		
Audit risk rating	Rationale for audit risk rating		
Medium	The controls are rated as moderate, as there is room for improvement for the adding of new streetlights. The impact is assessed to be medium due to the potential over submission indicated from the field audit findings.		
Actions taken to resolve the issue		Completion date	Remedial action status
Genesis will continue to work with SDC regarding their database accuracy which was brought to their attention		Continuous improvement	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Genesis will continue to work with SDC regarding their database accuracy which was brought to their attention		Continuous improvement	

CONCLUSION

This audit includes all streetlights for SDC and Waka Kotahi lights in the area as recorded in RAMM.

The RAMM database is managed by SDC and is remotely hosted by thinkproject New Zealand Limited. The field work is carried out by NES. Pocket RAMM is used in the field to issue work and record changes in the field into RAMM.

I checked the submission calculation provided by Genesis for November 2023 and confirmed it was correct.

The new connection process was discussed. SDC add lights once they are vested to Council. If the developer has requested the lights to be connected and they are not vested the volume is not reconciled until they are vested. The electrical connection of streetlights is not discussed in the PowerNet Distributor audit, so it is unclear what process is in place to ensure that the new streetlight connections include the trader accepting responsibility for the load. I recommend in the report that Genesis work with SDC and PowerNet to review this process.

Database accuracy is described as follows:

Result	Percentage	Comments
The point estimate of R	103.5	Wattage from survey is higher than the database wattage by 3.5%
R _L	100.6	With a 95% level of confidence, it can be concluded that the error could be between +0.6% and + 9.8%.
R _H	109.8	

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 0.6% and 9.8% higher than the wattage recorded in the DUML database.

In absolute terms the installed capacity is estimated to be the 5 kWh higher than the database indicates.

There is a 95% level of confidence that the installed capacity is between 1 kW and 15 kW higher than the database.

In absolute terms, total annual consumption is estimated to be 22,900 kWh higher than the DUML database indicates.

There is a 95% level of confidence that the annual consumption is between 3,600 kWh p.a. and 63,300 kWh p.a. higher than the database indicates.

The audit found three non-compliances and makes three recommendations. The database is well managed overall and were it not for a small number of errors found on the Waka Kotahi lights the database would have been within the allowable accuracy threshold. I have considered this in conjunction with Genesis’s responses and agree with this recommendation.

PARTICIPANT RESPONSE

Genesis has and will continue to work with SDC to continuously to raise database accuracy levels.

Genesis agrees with the audit findings.