

ELECTRICITY INDUSTRY PARTICIPATION CODE
DISTRIBUTED UNMETERED LOAD AUDIT REPORT

VERITEK

For

AUCKLAND AIRPORT STREETLIGHTS
(VECTOR NETWORK)
AND CONTACT ENERGY

Prepared by: Rebecca Elliot

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Date audit report completed: 29 May 2019

Audit report due date: 01-Jun-18

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EXECUTIVE SUMMARY

This audit of the Auckland Airport owned streetlights on the Vector network (**AIAL**) DUMML database and processes was conducted at the request of Contact Energy Limited (**Contact**), 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 ICP switched into Contact on 1/1/18 and was identified in the 2018 Reconciliation participant audit report as being an unmetered load greater than 6,000 kWh to be investigated. Contact have liaised with AIAL and confirmed that the load is associated with streetlights and requested that AIAL create a database. The database has been assessed for this audit. AIAL have confirmed that there were previously 29 lights recorded against this ICP, but the road has been widened and all but seven of the replacement lights are now connected to the AIAL embedded network and are settled by difference as part of the embedded network. The remaining seven streetlights at the entrance to the airport on George Bolt Memorial Drive are expected to be removed in the next 2-3 years and the replacement lights will also be connected to the AIAL embedded network but until this time AIAL will manage this distributed unmetered load in an excel spreadsheet. The extra 22 lights recorded on the registry will be resulting in an estimated annual over submission of 25,659.2 kWh.

The field audit found one wattage error. This has been passed to AIAL and the database has been updated.

The audit found four non-compliances found and no recommendations were made. The future risk rating of 11 indicates that the next audit be completed in 12 months. I have considered this in conjunction with Contact's responses, the volume of lights associated with this database and that the submission volumes will be checked as part of Contact's reconciliation participant audit recommend that the next audit be in 36 months' time.

AUDIT SUMMARY

NON-COMPLIANCES

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Distributed unmetered load audits	1.10	16A.26 and 17.295F	DUML audit not completed within the required timeframe.	Strong	Low	1	Cleared
Deriving submission information	2.1	11.1 of schedule 15.3	Database vs registry light volume difference resulting in an estimated annual over submission of 25,659.2 kWh. 1x incorrect wattage recorded in the database resulting in an estimated very minor over submission of 758 kWh per annum.	Moderate	Medium	4	Identified
Database Accuracy	3.1	15.2 and 15.37B(b)	1x incorrect wattage recorded in the database resulting in an estimated very minor over submission of 758 kWh per annum.	Moderate	Low	2	Cleared
Volume information accuracy	3.2	15.2 & 15.37B(c)	Database vs registry light volume difference resulting in an estimated annual over submission of 25,659.2 kWh. 1x incorrect wattage recorded in the database resulting in an estimated very minor over submission of 758 kWh per annum.	Moderate	Medium	4	Identified
Future Risk Rating						11	

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	Remedial Action
		Nil	

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

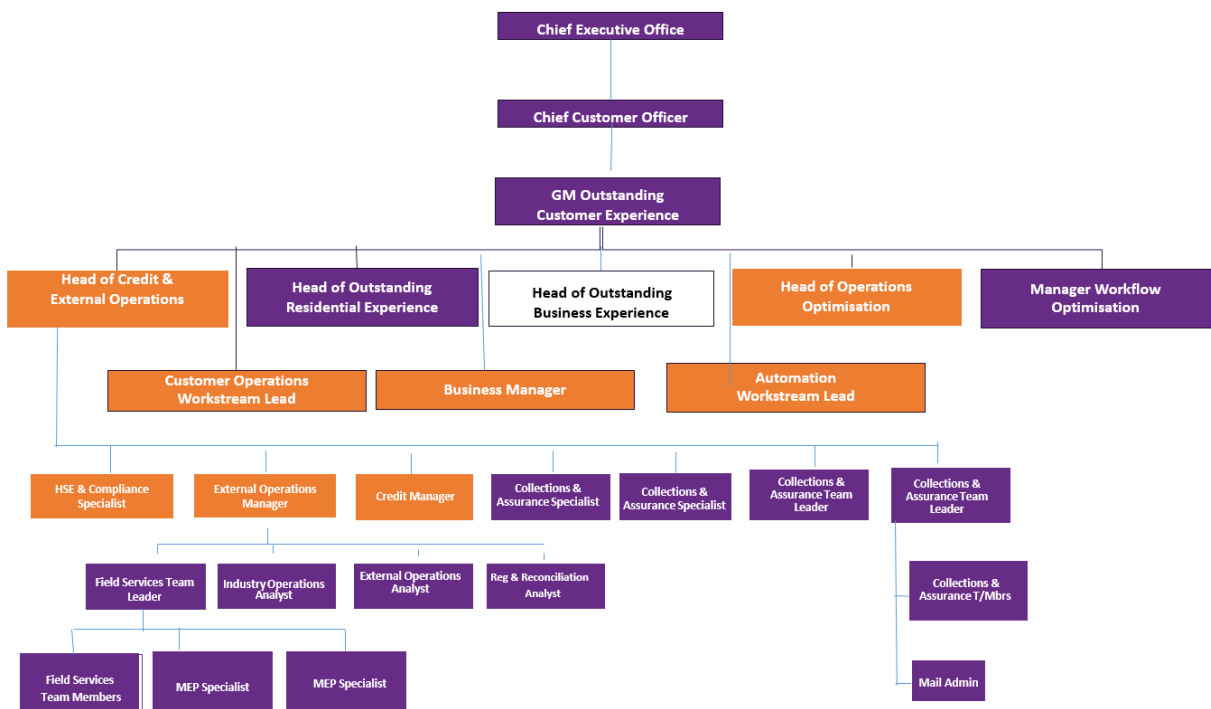
Section 11 of the Electricity Industry Act provides for the Electricity Authority to exempt any participant from compliance with all or any of the clauses.

Audit commentary

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

1.2. Structure of Organisation

Contact provided a copy of the relevant part of their organisational structure:



1.3. Persons involved in this audit

Auditor:

Name	Title
Rebecca Elliot	Auditor

Other personnel assisting in this audit were:

Name	Title	Company
Elnaz van Vuuren	HV Networks and Resiliency Manager	Auckland Airport
Allie Jones	External Operations Analyst	Contact Energy

1.4. Hardware and Software

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

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	Profile	Database number of items of load	Database wattage (watts)
1001239371LC14B	DRIVER ROAD	RPS	7	1,946
Total			7	1,946

1.7. Authorisation Received

All information was provided directly by Contact and AIAL.

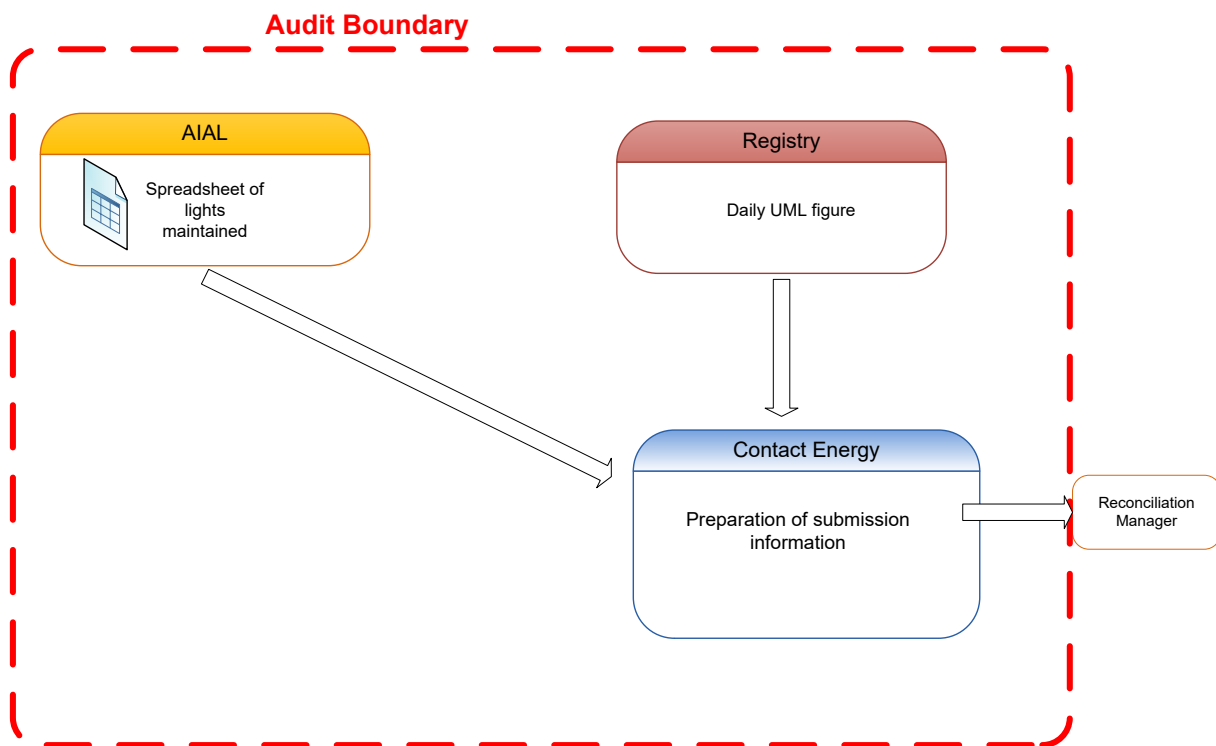
1.8. Scope of Audit

This audit of the Auckland Airport owned streetlights on the Vector network (**AIAL**) DUMML database and processes was conducted at the request of Contact Energy Limited (**Contact**), 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 ICP switched into Contact on 1/1/18 and was identified in the 2018 Reconciliation participant audit report as being an unmetered load greater than 6,000 kWh to be investigated. Contact have liaised with AIAL and confirmed that the load is associated with streetlights and requested that AIAL create a database. The database has been assessed for this audit. AIAL have confirmed that there were previously 29 lights recorded against this ICP, but the road has been widened and all but seven of the replacement lights are now connected to the AIAL embedded network and are settled by difference as part of the embedded network. The remaining seven streetlights at the entrance to the airport on George Bolt Memorial Drive are expected to be removed in the next 2-3 years and the replacement lights will also be connected to the AIAL embedded network but until this time AIAL will manage this distributed unmetered load in an excel spreadsheet. Any changes made to the field are updated in the spreadsheet maintained by the AIAL and these updates are expected to be provided to Contact.

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



The field audit was undertaken of the AIAL spreadsheet, consisting of seven items of load on 16th April 2019.

1.9. Summary of previous audit

This is the first audit of the AIAL streetlights on the Vector network. The ICP switched into Contact on 1/1/2018 and was identified in their 2018 reconciliation participant audit therefore no earlier audits have been completed in relation to these lights.

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

Contact 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 but was not completed within the required timeframe as Contact had to investigate the load and get AIAL to create a database.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 1.10 With: Clause 16A.26 (1)(a) From: 01-Jun-18 To: 31-Mar-19	DUML audit not completed within the required timeframe. Potential impact: None Actual impact: None Audit history: None Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
Low	The controls are rated as strong as Contact has robust controls in place to ensure audits are carried out but in this case, Contact had to liaise with the customer to get a database created. The impact is assessed to be none as the audit has now been completed.		
Actions taken to resolve the issue		Completion date	Remedial action status
Audit was requested once I learned of this ICP and found it's actual owner		31/05/2019	Cleared
Preventative actions taken to ensure no further issues will occur		Completion date	
N/A		N/A	

2. DUMML 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:

- *DUMML 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

Contact reconciles this DUMML load using the RPS profile and the registry information. The calculations were checked for the month of March 2019 and confirmed to be calculated correctly.

AIAL have confirmed that there were previously 29 lights recorded against this ICP, but the road has been widened and all but seven of the replacement lights are now connected to the AIAL embedded network and are settled by difference as part of the embedded network. This will be resulting in over submission of an estimated 25,659.2 kWh per annum. This is recorded as non-compliance below and in **sections 3.1** and **3.2**.

The field audit found one incorrect wattage recorded in the database which will be resulting in a very minor over submission of 758 kWh per annum. This has been passed to AIAL and been updated. This is also recorded as non-compliance in **sections 3.1** and **3.2**.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 2.1 With: Clause 11.1 of schedule 15.3 From: 01-Jun-18 To: 31-Mar-19	Database vs registry light volume difference resulting in an estimated annual over submission of 25,659.2 kWh. 1x incorrect wattage recorded in the database resulting in an estimated very minor over submission of 758 kWh per annum. 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 they will mitigate risk most of the time for a very small number of lights. The impact is assessed to be medium due to the estimated annual over submission of volume due to 22 extra lights being recorded on the registry than are present in the field.		
Actions taken to resolve the issue		Completion date	Remedial action status
The corrections are being backdated and resubmission will be completed back to November 2018 to correct this oversubmission		31/05/2019	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Going forward these lights will be removed from this ICP and moved into AIAL Residual load – once this occurs – in 2 -3 years, we will decommission this ICP		31/05/2019	

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.

Audit commentary

The database has only one ICP associated with it and this is recorded in the spreadsheet.

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 DUMML database must contain the location of each DUMML item.

Audit observation

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

Audit commentary

The database has a field for street name and a GPS location, both of which are populated for all items.

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 DUMML database must contain:

- *a description of load type for each item of load and any assumptions regarding the capacity*
- *the capacity of each item in watts.*

Audit observation

The database was checked to confirm that it contained a field for lamp type and wattage capacity and included any ballast or gear wattage and that each item of load had a value recorded in these fields.

Audit commentary

The database contains a lamp description, lamp wattage and lamp ballast fields. These fields are populated for every item in the spreadsheet.

The accuracy of wattage and ballasts in the database 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 the entire database of seven items of load on 16th April 2019.

Audit commentary

The field audit findings found all seven lights were correctly located. There were no extra items of load found in the field. 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

Any changes that are made during any given month take effect from the beginning of that month. The information is available which would allow for the total load in kW to be retrospectively derived for any day. On 20th September 2012, the Authority sent a memo to Retailers and auditors advising that tracking of load changes at a daily level was not required as long as the database contained an audit trail. I have interpreted this to mean that the production of a monthly “snapshot” report is sufficient to achieve compliance.

The database tracks additions and removals as required by this clause.

These streetlights are maintained as part of the AIAL streetlight maintenance contractor’s responsibility. AIAL do not expect any changes to be made to these before they are decommissioned when this section of the road is redeveloped. Any changes made will be updated in the spreadsheet and will be provided to Contact to update the registry UML figure accordingly.

Audit outcome

Compliant

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

Code reference

Clause 11(4) of Schedule 15.3

Code related audit information

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

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

Audit observation

The spreadsheet was checked for audit trails.

Audit commentary

No changes have been made to the spreadsheet since it was created, but any changes made will be tracked in the spreadsheet as required by this clause by AIAL.

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 100% field audit was undertaken of the spreadsheet.

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

Audit commentary

The 100% field audit found all seven lights in the field were recorded correctly except one which is an LED light not a high-pressure sodium light. This has been passed to AIAL and has been corrected in their database. I was unable to determine what the correct wattage was but typically 103W LED lights replace 250W HPS lights and will therefore be causing a very minor estimated over submission of 758 kWh per annum (based on the daily kWh variance x 365 days).

Wattages for all items of load were checked against the published standardised wattage table produced by the Electricity Authority and found to be correct.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 3.1 With: Clause 15.2 and 15.37B(b)) From: 01-Jun-18 To: 31-Mar-19	1x incorrect wattage recorded in the database resulting in an estimated very minor over submission of 758 kWh per annum. Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	The controls are rated as moderate as AIAL will manage any changes made in the field to the small number of lights. The impact is assessed to be low as the volume of over submission is very minor.		
Actions taken to resolve the issue		Completion date	Remedial action status
This has been corrected		31/05/2019	Cleared
Preventative actions taken to ensure no further issues will occur		Completion date	
N/A		31/05/2019	

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 spreadsheet 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 burn hours against the submitted figure to confirm accuracy.

Audit commentary

Contact reconciles this DUML load using the RPS profile and the registry information. The calculations were checked for the month of March 2019 and confirmed to be calculated correctly.

AIAL have confirmed that there were previously 29 lights recorded against this ICP, but the road has been widened and all but seven of the replacement lights are now connected to the AIAL embedded network and are settled by difference as part of the embedded network. This will be resulting in over submission of an estimated 25,659.2 kWh per annum. This is recorded as non-compliance below and in **section 3.2**.

The field audit found one incorrect wattage recorded in the database which will be resulting in a very minor over submission of 758 kWh per annum. This has been passed to AIAL and been updated. This is also recorded as non-compliance in **sections 2.1** and **3.1**.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 3.2 With: Clause 15.2 & 15.37B(c) From: 01-Jun-18 To: 31-Mar-19	Database vs registry light volume difference resulting in an estimated annual over submission of 25,659.2 kWh. 1x incorrect wattage recorded in the database resulting in an estimated very minor over submission of 758 kWh per annum. 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 they will mitigate risk most of the time for a very small number of lights. The impact is assessed to be medium due to the estimated annual over submission of volume due to 22 extra lights being recorded on the registry than are present in the field.		
Actions taken to resolve the issue		Completion date	Remedial action status
This is being updated and corrected		31/05/2019	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
N/A		31/05/2019	

CONCLUSION

This ICP switched into Contact on 1/1/18 and was identified in the 2018 audit report as being an unmetered load greater than 6,000 kWh to be investigated. Contact have liaised with AIAL and confirmed that the load is associated with streetlights and requested that AIAL create a database. The database has been assessed for this audit. AIAL have confirmed that there were previously 29 lights recorded against this ICP, but the road has been widened and all but seven of the replacement lights are now connected to the AIAL embedded network and are settled by difference as part of the embedded network. The remaining seven streetlights at the entrance to the airport on George Bolt Memorial Drive are expected to be removed in the next 2-3 years and the replacement lights will also be connected to the AIAL embedded network but until this time AIAL will manage this distributed unmetered load in an excel spreadsheet. The extra lights 22 recorded on the registry will be resulting in an estimated annual over submission of 25,659.2 kWh.

The field audit found one wattage error. This has been passed to AIAL and the database has been updated.

The audit found four non-compliances found and no recommendations were made. The future risk rating of 11 indicates that the next audit be completed in 12 months. I have considered this in conjunction with Contact's responses, the volume of lights associated with this database and that the submission volumes will be checked as part of Contact's reconciliation participant audit recommend that the next audit be in 36 months' time.

PARTICIPANT RESPONSE

The customer has willingly completed all actions that have been asked of them. Their database is now accurate.

Contact is updating their information to correct the over submission.

With the knowledge that these non compliances are now cleared and this ICP will be decommissioned in the next 2 – 3 years – we request that the authority decide on a long audit period for this ICP. This request is based on the now accurate database and also the small amount of lights and load that this ICP represents.