ELECTRICITY INDUSTRY PARTICIPATION CODE
METERING EQUIPMENT PROVIDER AUDIT REPORT

For

LEGACY METERING GROUP

Prepared by: Steve Woods – Veritek Limited

Date audit commenced: 3 July 2018

Date audit report completed: 11 July 2018

Audit report due date: 31-Jul-18

TABLE OF CONTENTS

EXECUTIVE SUMMARY

Legacy Metering Group Limited (LMGL) is a Metering Equipment Provider (MEP) and is required to undergo an audit by 31 July 2018, in accordance with clause 1(1)(b) of schedule 10.5.

The audit identified 11 non-compliances and one recommendation is made.

There are 23,226 ICPs where the metering installation certification has expired. 342 of these previously had full certification and eight of the 342 are Category 2. LMGL is conducting statistical sampling of their entire Category 1 population; however, this program is not yet complete for two main reasons. A significant proportion of meter replacements were unable to be completed due to health and safety or access reasons, leading to delays in getting the required number of meters to the test laboratory, and it was recently discovered that many of the boxes of meters delivered to the laboratory had not been appropriately transported. This second point may result in meters being discarded with additional examples being sought from the field.

Several issues were found with certification practices, as follows:

1. During the previous audit it was recorded that one ICP was certified as a lower category but monitoring was not conducted, leading to the certification being cancelled. Recertification has not yet occurred. It should be noted that the immediate actions taken by LMGL sees 'alterations at site' in an advanced state. LMGL expects to lose this site to a smart meter MEP upon the final inspection process concluding.
2. During the previous audit, invalid alternative certification was applied to two metering installations, where the comparative certification process was used, confirming that access could be obtained to the measuring transformers. Alternative certification can only be applied where access cannot be obtained to the measuring transformers. The installations have not been recertified and the registry has not been updated with the correct information.
3. Several Category 2 installations were certified using the comparative method but the uncertainty calculations did not take temperature into account and two are likely to have uncertainties outside the allowable 0.6%.
4. One installation was certified for insufficient load, but it is NHH and monitoring is not conducted.

What is pleasing to see is improvements in data accuracy at sites acquired by LMGL and the speed at which resolutions to identified issues have been cleared.

The date of the next audit is determined by the Electricity Authority and is dependent on the level of compliance during this audit. The table below provides some guidance on this matter and recommends an audit frequency of three months. I recommend the Authority considers a longer period of six months to allow sufficient time to resolve the issues surrounding statistical sampling.

AUDIT SUMMARY

NON-COMPLIANCES

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Provision of accurate information	2.5	11.2 and Clause 10.6	Invalid alternative certification not corrected since the last audit.	Moderate	Low	2	Disputed
Registry updates	3.2	2 of Schedule 11.4	145 registry updates later than 15 business days.	Moderate	Low	2	Identified
Metering Installation Design & Accuracy	4.3	4(1) of Schedule 10.7	Delta ATH not calculating uncertainty in accordance with the Code. Total uncertainty greater than 0.6% for ICPs 0000004050DE261 and 0000004057DEFAB.	Weak	Low	3	Disputed
Changes to registry records	4.10	3 of Schedule 11.4	Some records updated on the registry later than 10 business days.	Strong	Low	1	Identified
Notification of decommissioning	4.12	11.18B(3)	Trader not notified to carry out a final interrogation for three ICPs.	Strong	Low	1	Identified
Provision of Registry Information	6.2	7 (1), (2) and (3) of Schedule 11.4	Some registry records incomplete or incorrect.	Strong	Low	1	Identified
Registry validation	6.3	6 of Schedule 11.4	Registry records not compared to LMGL's records.	None	Low	5	Identified
Cancellation of certification	6.4	20 of Schedule 10.7	Certification cancelled for six ICPs and the registry was not updated within 10 business days.	Weak	Medium	6	Investigating
Certification of metering installations	7.1	10.38 (a), clause 1 and clause 15	Certification expired for 23,226 ICPs.	Weak	Medium	6	Identified

		of Schedule 10.7					
Insufficient load	7.7	14(3) and (4) of Schedule 10.7	ICP 0000130696ENB89 certified for insufficient load but monitoring not conducted.	None	Low	5	Identified
Alternative certification	7.9	32(2), (3) and (4) of Schedule 10.7	Invalid alternative certification applied.	Weak	Low	3	Identified
					Future Risk Rating	**35**	
					Indicative Audit Frequency	**3 months**	

Future risk rating	1-2	3-6	7-9	10-19	20-24	25+
Indicative audit frequency	36 months	24 months	18 months	12 months	6 months	3 months

RECOMMENDATIONS

Subject	Section	Recommendation	Description
Registry updates	3.2	Regarding Clause 2 of Schedule 11.4	Advise gaining traders more frequently to nominate LMGL when ICPs switch away from Trustpower.

ISSUES

Subject	Section	Recommendation	Description
		Nil	

1. ADMINISTRATIVE

1.1. Exemptions from Obligations to Comply With Code (Section 11)

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

I checked the Electricity Authority website and I confirm there are no exemptions in place.

Audit commentary

I checked the Electricity Authority website and I confirm there are no exemptions in place.

1.2. Structure of Organisation

LMGL is operated by the two directors, Gary Nightingale and Mike Bickers.

1.3. Persons involved in this audit

Auditor: Steve Woods

Veritek Limited

Electricity Authority Approved Auditor

LMGL personnel assisting in this audit were:

Name	Title
Gary Nightingale	Director
Mike Bickers	Director

1.4. Use of Agents (Clause 10.3)

Code reference

Clause 10.3

Code related audit information

A participant who uses a contractor

- *remains responsible for the contractor's fulfillment of the participants Code obligations*
- *cannot assert that it is not responsible or liable for the obligation due to the action of a contractor*
- *must ensure that the contractor has at least the specified level of skill, expertise, experience, or qualification that the participant would be required to have if it were performing the obligation itself.*

Audit observation

LMGL engages with ATHs to conduct certification activities. LMGL relies on these ATHs to act as agents for the management and storage of certification records. I requested certification reports for 35 ICPs to confirm their compliance and availability.

Audit commentary

Complete certification records were provided for all 35 installations, including three installations where LMGL had ceased to be the MEP.

1.5. Hardware and Software

LMGL uses the registry as their database. They also have a workflow system and they have a database of metering records for those installations certified or recertified under their ownership.

Backup is in accordance with standard industry protocols.

1.6. Breaches or Breach Allegations

LMGL confirmed there are no breach allegations related to the scope of this audit.

1.7. ICP Data

Metering Category	Number of ICPs
1	36,435
2	290
3	4
4	0
5	0
9	0

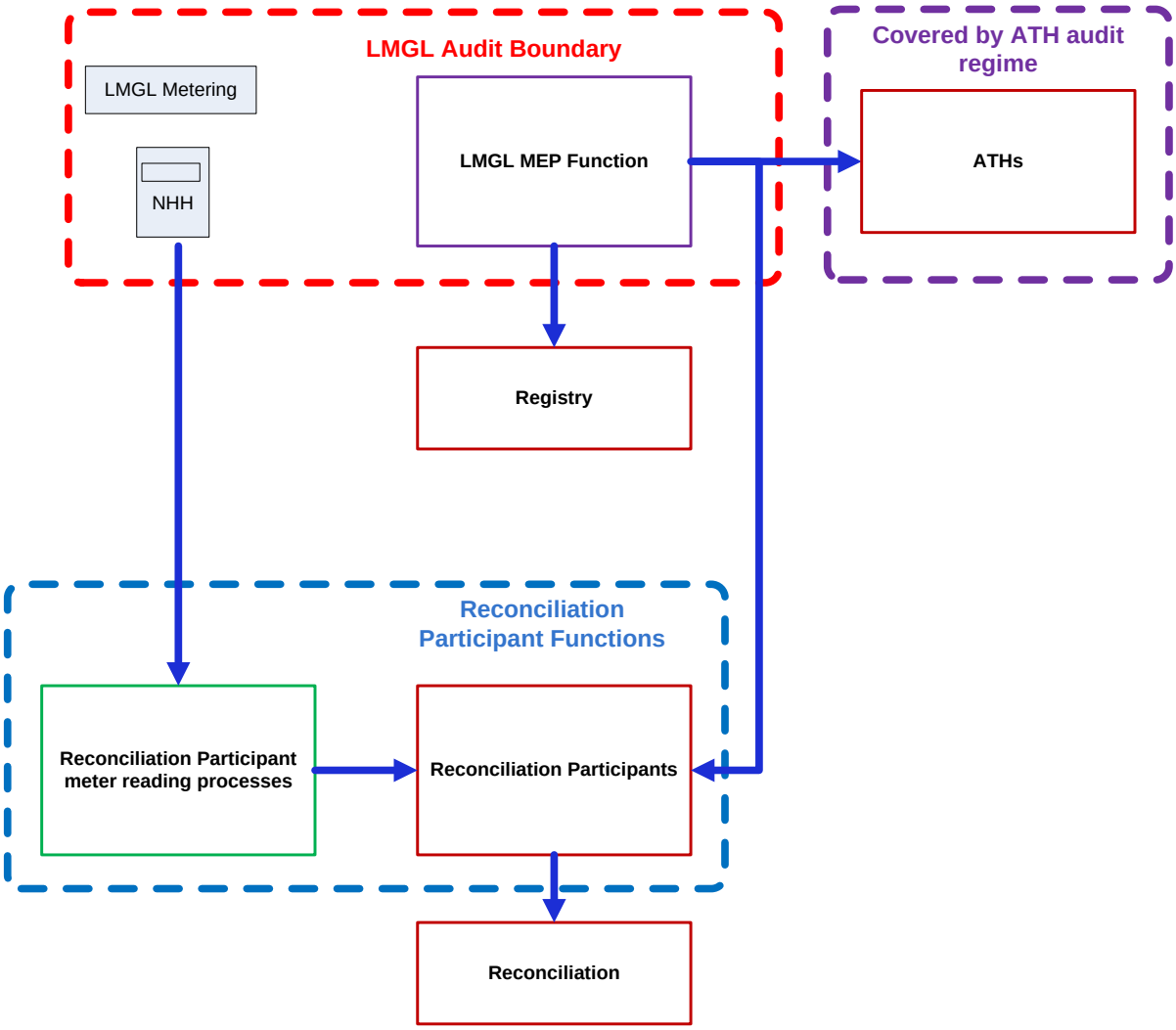
1.8. Authorisation Received

A letter of authorisation was not required or requested.

1.9. Scope of Audit

This audit was conducted in accordance with the Guideline for Metering Equipment Provider Audits V2.1, which was published by the Electricity Authority.

The boundaries of this audit are shown below for greater clarity.


LMGL Audit Boundary
LMGL Metering
NHH
LMGL MEP Function
Covered by ATH audit regime
ATHs
Registry
Reconciliation Participant Functions
Reconciliation Participant meter reading processes
Reconciliation Participants
Reconciliation

1.10. Summary of previous audit

The previous audit was conducted in October 2017 by Steve Woods of Veritek Limited. The table below shows that many of the issues have been cleared.

Table of Non-Compliance

Subject	Section	Clause	Non-compliance	Status
Registry updates	3.2	2 of Schedule 11.4	345 registry updates later than 15 business days.	Still existing
Design reports	4.1	2 of Schedule 10.7	Design reports not obtained or recorded for 3 Category 2 metering installations.	Cleared
Metering Installation Design & Accuracy	4.3	4(1) of Schedule 10.7	ATHs are not always recording the design report reference. Delta and NPOW ATHs not calculating uncertainty in accordance with the Code.	Design reports are recorded but non-compliance exists in relation to uncertainty calculations
Changes to registry records	4.10	3 of Schedule 11.4	Some records updated on the registry later than 10 business days.	Still existing
Accurate and complete records	5.1	4(1)(a) and (b) of Schedule 10.6, and Table 1, Schedule 11.4	Certification records not provided for two metering installations. Meter certification records not provided for 3 metering installations.	Cleared
Provision of Registry Information	6.2	Clause 7 (1), (2) and (3) of Schedule 11.4	Some registry records incomplete or incorrect.	Still existing
Cancellation of certification	6.4	20 of Schedule 10.7	Certification cancelled for one ICP and the registry was not updated within 10 business days.	Still existing for further ICPs

Subject	Section	Clause	Non-compliance	Status
Certification of metering installations	7.1	10.38 (a), clause 1 and clause 15 of Schedule 10.7	Certification expired for 26,267 ICPs.	Still existing
Certification as a lower category	7.6	6(1)(b) and (d), and 6(2)(b) of Schedule 10.7	Monitoring not conducted for one installation certified as a lower category.	This certification is now cancelled
Alternative certification	7.9	32(2), (3) and (4) of Schedule 10.7	Invalid alternative certification applied.	Still existing
Meter certification	7.15	24(3) of Schedule 10.7	Meters not certified for four metering installations.	Cleared
CT certification	7.16	18 of Schedule 10.7	CTs not certified for three metering installations.	Cleared
Data storage device certification	7.17	36(1) of Schedule 10.7	Data storage devices not certified for three metering installations.	Cleared

Table of Recommendations

Subject	Section	Clause	Recommendation for improvement	Status
			Nil	

2. OPERATIONAL INFRASTRUCTURE

2.1. MEP responsibility for services access interface (Clause 10.9(2))

Code reference

Clause 10.9(2)

Code related audit information

The MEP is responsible for providing and maintaining the services access interface.

Audit observation

I checked certification records for 35 metering installations, covering all relevant ATHs.

Audit commentary

The Code places responsibility for maintaining the services access interface on the MEP and places responsibility for determining and recording it with ATHs. I checked the certification records for all relevant ATHs and the services access interface was recorded correctly in all cases.

Audit outcome

Compliant

2.2. Dispute Resolution (Clause 10.50(1) to (3))

Code reference

Clause 10.50(1) to (3)

Code related audit information

Participants must in good faith use its best endeavours to resolve any disputes related to Part 10 of the Code.

Disputes that are unable to be resolved may be referred to the Authority for determination.

Complaints that are not resolved by the parties or the Authority may be referred to the Rulings Panel by the Authority or participant.

Audit observation

I checked whether any disputes had been dealt with during the audit period.

Audit commentary

LMGL has not been required to resolve any disputes in accordance with this clause.

Audit outcome

Compliant

2.3. MEP Identifier (Clause 7(1) of Schedule 10.6)

Code reference

Clause 7(1) of Schedule 10.6

Code related audit information

The MEP must ensure it has a unique participant identifier and must use this participant identifier (if required) to correctly identify its information.

Audit observation

I checked the registry data to ensure the correct MEP identifier was used.

Audit commentary

LMGL uses the LMGL identifier in all cases.

Audit outcome

Compliant

2.4. Communication Equipment Compatibility (Clause 40 Schedule 10.7)

Code reference

Clause 40 Schedule 10.7

Code related audit information

The MEP must ensure that the use of its communication equipment complies with the compatibility and connection requirements of any communication network operator the MEP has equipment connected to.

Audit observation

I checked whether there were any installations where communication equipment was present and whether the type test reports confirmed compliance.

Audit commentary

LMGL is the MEP for some metering installations where communication equipment is present, and this equipment complies with the telecommunications requirements.

Audit outcome

Compliant

2.5. Participants to Provide Accurate Information (Clause 11.2 and Clause 10.6)

Code reference

Clause 11.2 and Clause 10.6

Code related audit information

The MEP must take all practicable steps to ensure that information that the MEP is required to provide to any person under Parts 10 and 11 is complete and accurate, not misleading or deceptive and not likely to mislead or deceive.

If the MEP becomes aware that in providing information under Parts 10 and 11, the MEP has not complied with that obligation, the MEP must, as soon as practicable, provide such further information as is necessary to ensure that the MEP does comply.

Audit observation

The content of this audit report was reviewed to determine whether all practicable steps had been taken to provide accurate information.

Audit commentary

The content of this audit report indicates that LMGL has taken all practicable steps to ensure that information is complete and accurate in most instances, with the exception of the matter raised in **Section 7.9**, where two metering installations were incorrectly certified, and recertification has not yet occurred, and the registry has not been updated.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.5 With: Clause 11.2 and Clause 10.6 From: 01-Oct-17 To: 03-Jul-18	Invalid alternative certification not corrected since the last audit. Potential impact: Medium Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as moderate because they mitigate risk most of the time but there is room for improvement. The two installations in question did not have low burden addressed nor was measurement uncertainty calculated. It appears both installations may be over recording although the error is within the allowable 2.5%. I have recorded the impact as minor and the audit risk rating as low.

Actions taken to resolve the issue	Completion date	Remedial action status
Engaged with Test House immediately after the audit to enquire as to the status of change. The response is to the effect that they are still working through the validity of this calculation variant and are not convinced that they are necessarily incorrect. We note Delta have disputed the calculation findings in their own audit report lodged on the EA Website. We have diaried for regular updates from them whilst they work through this. We remain in breach, as with other MEPS as a consequence. We have marked this as "disputed" only as a consequence of this being Delta's audit position on this point.	On review	Disputed
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Diaried for regular reviews of the 'Audit' page of the EA website to check on audits lodged vs reports we receive from the Test Houses.	Proposed or actual date	

3. PROCESS FOR A CHANGE OF MEP

3.1. Payment of Costs to Losing MEP (Clause 10.22)

Code reference

Clause 10.22

Code related audit information

The MEP for a metering installation may change only if the responsible participant enters into an arrangement with another person to become the MEP for the metering installation, and if certain notification requirements are met (in relation to the registry and the reconciliation manager).

The gaining MEP must pay the losing MEP a proportion of the costs within 20 business days of assuming responsibility.

The costs are those directly and solely attributable to the certification and calibration tests of the metering installation or its components from the date of switch until the end of the current certification period.

Audit observation

LMGL has not sent or received any invoices in relation to this clause.

Audit commentary

LMGL has not sent or received any invoices in relation to this clause.

Audit outcome

Compliant

3.2. Registry Notification of Metering Records (Clause 2 of Schedule 11.4)

Code reference

Clause 2 of Schedule 11.4

Code related audit information

The gaining MEP must advise the registry of the registry metering records for the metering installation within 15 days of becoming the MEP for the metering installation.

Audit observation

I checked the event detail for the period 01/10/17 to 31/05/18 for all records where LMGL became the MEP to evaluate the timeliness of updates.

Audit commentary

The table below shows there were 145 late updates to the registry out of 548 events. All of the late updates were due to late nomination by traders. Many of the late nominations were due to late notification by LMGL to the relevant traders that a nomination was required. This is for ICPs where there is a trader change from Trustpower to another trader. Contact Energy is still the MEP for some ICPs where LMGL is the meter owner and once the switch occurs, LMGL notifies the gaining trader that a nomination is required. This process occurs approximately every two months. I recommend it occurs more frequently to allow both the trader and LMGL to achieve compliance.

Year	Total	Over 15 days	% compliance	Average	Late nomination
Dec 2016	10,501	843	92%		323
Oct 2017	4,928	345	93%	4.9	326
June 2018	**548**	**145**	**74%**	**20**	**145**

Recommendation	Description	Audited party comment	Remedial action
Regarding Clause 2 of Schedule 11.4	Advise gaining traders more frequently to nominate LMGL when ICPs switch away from Trustpower.	This is a consequence of the MEO/MEP structure on some of the ex-CTCT meters where TPWR did not wish to nominate LMGL as MEP. We have instigated a programme of advising retailers every 2 weeks of ICPs that have switched from TPWR with LMGL MEO sites.	Identified

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 3.2 With: Clause 2 of Schedule 11.4 From: 01-Oct-17 To: 31-May-18	145 registry updates later than 15 business days. Potential impact: Medium Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2		
Audit risk rating	**Rationale for audit risk rating**		
Low	Controls are in place to ensure the timeliness of updates, but LMGL is often prevented from updating the registry due to late nomination or late field notification. LMGL can make improvements to the frequency of notifications to traders when a nomination is required. The impact on other participants is minor; therefore, the audit risk rating is low.		
Actions taken to resolve the issue		**Completion date**	**Remedial action status**

LMGL receives reports from ATHs of completed metering work (in some cases). Where ICPs have LMGL meters installed and no nomination has yet occurred LMGL advises the retailer and requests nomination. Where there is a pro-active work order, LMGL requests the nomination upon receipt of the work order if it is not the nominated MEP.	Ongoing	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
LMGL will continue monitoring returns and received work orders and engaging with the retailers where there is no nomination in place.	Ongoing	

3.3. Provision of Metering Records to Gaining MEP (Clause 5 of Schedule 10.6)

Code reference

Clause 5 of Schedule 10.6

Code related audit information

During an MEP switch, a gaining MEP may request access to the losing MEP's metering records.

On receipt of a request from the gaining MEP, the losing MEP has 10 business days to provide the gaining MEP with the metering records or the facilities to enable the gaining MEP to access the metering records.

The losing MEP must ensure that the metering records are only received by the gaining MEP or its contractor, the security of the metering records is maintained, and only the specific metering records required for the purposes of the gaining MEP exercising its rights and performing its obligations are provided.

Audit observation

I checked with LMGL to confirm whether there had been any requests from other MEPs.

Audit commentary

A small number of requests for information have been received and the information was provided in a compliant manner within the timeframe required.

Audit outcome

Compliant

3.4. Termination of MEP Responsibility (Clause 10.23)

Code reference

Clause 10.23

Code related audit information

Even if the MEP ceases to be responsible for an installation, the MEP must either comply with its continuing obligations; or before its continuing obligations terminate, enter into an arrangement with a participant to assume those obligations.

The MEP is responsible if it:

- *is identified in the registry as the primary metering LMGL or*
- *is the participant who owns the meter for the POC or to the grid or*
- *has accepted responsibility under clause 1(1)(a)(ii) of schedule 11.4 or*
- *has contracted with a participant responsible for providing the metering installation.*

MEPs obligations come into effect on the date recorded in the registry as being the date on which the metering installation equipment is installed or, for an NSP the effective date set out in the NSP table on the Authority's website.

An MEPs obligations terminate only when;

- *the ICP changes under clause 10.22(1)(a);*
- *the NSP changes under clause 10.22(1)(b), in which case the MEPs obligations terminate from the date on which the gaining MEP assumes responsibility;*
- *the metering installation is no longer required for the purposes of Part 15; or*
- *the load associated with an ICP is converted to be used solely for unmetered load.*

Audit observation

I confirmed that LMGL has ceased to be responsible for some metering installations by checking the event detail report.

Audit commentary

LMGL continues with their responsibilities, mainly in relation to the storage of records, which are kept indefinitely. I requested the certification records for three installations where LMGL had ceased to be responsible and these were sought from the relevant ATH and provided to me.

Audit outcome

Compliant

4. INSTALLATION AND MODIFICATION OF METERING INSTALLATIONS

4.1. Design Reports for Metering Installations (Clause 2 of Schedule 10.7)

Code reference

Clause 2 of Schedule 10.7

Code related audit information

The MEP must obtain a design report for each proposed new metering installation or a modification to an existing metering installation, before it installs the new metering installation or before the modification commences.

Clause 2(2) and (3)—The design report must be prepared by a person with the appropriate level of skills, expertise, experience and qualifications and must include a schematic drawing, details of the configuration scheme that programmable metering components are to include, confirmation that the configuration scheme has been approved by an approved test laboratory, maximum interrogation cycle, any compensation factor arrangements, method of certification required, and name and signature of the person who prepared the report and the date it was signed.

Clause 2(4)—The MEP must provide the design report to the certifying ATH before the ATH installs or modifies the metering installation (or a metering component in the metering installation).

Audit observation

LMGL has engaged several ATHs for certification activities. All ATHs have provided design reports for this work which I have checked.

Audit commentary

The design reports used by VEMS, IndeServe and Delta include all relevant details required by the Code and ATHs had correctly recorded the design for all 35 metering installations checked.

Audit outcome

Compliant

4.2. Contracting with ATH (Clause 9 of Schedule 10.6)

Code reference

Clause 9 of Schedule 10.6

Code related audit information

The MEP must, when contracting with an ATH in relation to the certification of a metering installation, ensure that the ATH has the appropriate scope of approval for the required certification activities.

Audit observation

I confirmed that LMGL has used the VEMS, Delta and IndeServe ATHs during the audit period. These were then checked against the Authority's website for scope of approval.

Audit commentary

I have checked the Authority's website and confirm that all ATHs have current and appropriate scope of approvals.

Audit outcome

Compliant

4.3. Metering Installation Design & Accuracy (Clause 4(1) of Schedule 10.7)

Code reference

Clause 4(1) of Schedule 10.7

Code related audit information

The MEP must ensure:

- *that the sum of the measured error and uncertainty does not exceed the maximum permitted error set out in Table 1 of Schedule 10.1 for the category of the metering installation*
- *the design of the metering installation (including data storage device and interrogation system) will ensure the sum of the measured error and the smallest possible increment of the energy value of the raw meter data does not exceed the maximum permitted error set out in Table 1 of Schedule 10.1 for the category of installation*
- *the metering installation complies with the design report and the requirements of Part 10.*

Audit observation

I checked the processes used by LMGL to ensure compliance with the design and with the error thresholds stipulated in Table 1. I also checked the certification records for 15 CT metered metering installations.

Audit commentary

For Category 2 comparative certification, Delta's error and uncertainty calculation does not consider the temperature coefficient of the working standard. This matter has been present for a number of years and until recently was disputed by Delta. Delta has recently undertaken to start using the latest MSL calculator, including consideration of temperature. I requested copies of certification records for six metering installations. Uncertainty calculations were not conducted in a compliant manner for any of the six. Two of the installations will have uncertainty figures greater than 0.6% when temperature is taken into consideration. Certification is therefore cancelled. The ICPs are 0000004050DE261 and 0000004057DEFAB.

With regard to the design of the installation (including data storage device and interrogation system), LMGL ensures the sum of the measured error and the smallest possible increment of the energy value of the raw meter data does not exceed the maximum permitted error set out in Table 1 of Schedule 10.1 for the category of installation. There are no components installed where "coarse" rounding is in place for the data, or where meters with a low pulse rate are connected to separate data storage devices.

LMGL has a process to ensure the metering installation complies with the design report and the requirements of Part 10 by requiring ATH's to confirm the installations match the design, or by requiring updates to be provided if the installation does not match the design.

I checked 35 recent certification records and found that the design report was populated in all cases.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.3 With: Clause 4(1) of Schedule 10.7 From: 06-Dec-17 To: 30-Jun-18	Delta ATH not calculating uncertainty in accordance with the Code. Total uncertainty greater than 0.6% for ICPs 0000004050DE261 and 0000004057DEFAB. Potential impact: Medium Actual impact: Low Audit history: Multiple times Controls: Weak Breach risk rating: 3
Audit risk rating	**Rationale for audit risk rating**
Low	I have recorded the control effectiveness as weak because this matter has been present and not resolved for several years. The impact is minor; therefore the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
Engaged with Test House immediately post the audit to enquire as to the status of change. The response is to the effect that they are still working through the validity of this calculation variant and are not convinced that they are necessarily incorrect. We note Delta have disputed the calculation findings in their own audit report lodged on the EA Website. We have diaried for regular updates from them whilst they work through this. We remain in breach, as with other MEPS as a consequence. We have marked this as "disputed" only as a consequence of this being Delta's audit position on this point.	10/7/2018	Disputed
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Diaried for regular reviews of the 'Audit' page of the EA website to check on audits lodged vs reports we receive from the Test Houses.	Ongoing – but from 10/7/2018	

4.4. Subtractive Metering (Clause 4(2)(a) of Schedule 10.7)

Code reference

Clause 4(2)(a) of Schedule 10.7

Code related audit information

For metering installations for ICPs that are not also NSPs, the MEP must ensure that the metering installation does not use subtraction to determine submission information used for the purposes of Part 15.

Audit observation

I asked LMGL to confirm whether subtraction was used for any metering installations where they were the MEP.

Audit commentary

LMGL does not have any metering installations where subtractive metering is used.

Audit outcome

Not applicable

4.5. HHR Metering (Clause 4(2)(b) of Schedule 10.7)

Code reference

Clause 4(2)(b) of Schedule 10.7

Code related audit information

For metering installations for ICPs that are not also NSPs, the MEP must ensure that all category 3 or higher metering installations must be half-hour metering installations.

Audit observation

LMGL is the MEP for four metering installations above Category 2. I checked the registry fields to confirm compliance.

Audit commentary

All four installations have HHR metering.

Audit outcome

Compliant

4.6. NSP Metering (Clause 4(3) of Schedule 10.7)

Code reference

Clause 4(3) of Schedule 10.7

Code related audit information

The MEP must ensure that the metering installation for each NSP that is not connected to the grid does not use subtraction to determine submission information used for the purposes of Part 15 and is a half-hour metering installation.

Audit observation

LMGL is not the MEP for any NSP metering installations.

Audit commentary

LMGL is not responsible for any NSP metering.

Audit outcome

Not applicable

4.7. Responsibility for Metering Installations (Clause 10.26(10))

Code reference

Clause 10.26(10)

Code related audit information

The MEP must ensure that each point of connection to the grid for which there is a metering installation that it is responsible for has a half hour metering installation.

Audit observation

LMGL is not responsible for any grid metering.

Audit commentary

LMGL is not responsible for any grid metering.

Audit outcome

Not applicable

4.8. Suitability of Metering Installations (Clause 4(4) of Schedule 10.7)

Code reference

Clause 4(4) of Schedule 10.7

Code related audit information

The MEP must, for each metering installation for which it is responsible, ensure that it is appropriate having regard to the physical and electrical characteristics of the POC.

Audit observation

I checked the ATH processes for the management of this area.

Audit commentary

The VEMS design report contains reference to workmanship; ensuring access cannot be gained to live conductors; earthing arrangements and compliance with AS/NZS 3000. I have checked the Delta process and confirmed that the MR-002 quality manual/operating instructions ensure compliance with relevant electrical legislation. Indeserve has appropriate instructions regarding this matter.

Audit outcome

Compliant

4.9. Installation & Modification of Metering Installations (Clauses 10.34(2), (2A) and (3))

Code reference

Clauses 10.34(2), (2A) and (3)

Code related audit information

If a metering installation is proposed to be installed or modified at a POC, other than a POC to the grid, the MEP must consult with and use its best endeavours, to agree with the distributor and the trader for that POC, before the design is finalised, on the metering installations:

- *required functionality*

- *terms of use*
- *required interface format*
- *integration of the ripple receiver and the meter*
- *functionality for controllable load.*

Each participant involved in the consultations must use its best endeavours to reach agreement and act reasonably and in good faith.

Audit observation

The Authority determined that MEPs are not required to consult with distributors and traders unless the design of an installation is altered. There have not been any changes to any designs during the audit period.

Audit commentary

The Authority determined that MEPs are not required to consult with distributors and traders unless the design of an installation is altered. There have not been any changes to any designs during the audit period.

Audit outcome

Not applicable

4.10. Changes to Registry Records (Clause 3 of Schedule 11.4)

Code reference

Clause 3 of Schedule 11.4

Code related audit information

The MEP must advise the registry of the registry metering records or any change to the registry metering records for a metering installation for which it is responsible, no later than 10 business days following:

a) the electrical connection of an ICP that is not also an NSP
b) any subsequent change in any matter covered by the metering records.

Audit observation

I checked the event detail report for the period 01/10/17 to 31/05/18 to evaluate the timeliness of registry updates.

Audit commentary

The table below shows that 93% of new connection updates and 92% of corrections were within 10 business days. 23 of the 34 late new connection updates were caused by late nomination by the trader. The other main issue was late field notification.

I checked the records for ten ICPs where updates had occurred as a result of recertification. In most cases work orders were issued by traders directly to ATHs and the ATHs failed to notify LMGL. In two cases the ATH replaced metering during the inspection process but failed to notify.

Event	Year	Total ICPs	ICPs Notified Within 10 Days	ICPs Notified Greater Than 10 Days	Average Notification Days	Percentage Compliant
New Connection	2016	436	351	85	8.7	80%
	2017	535	493	42	5.3	92%
	2018	452	418	34	5.3	93%
Updates	2016	32,112	31,178	934	1.7	97%
	2017	18,200	17,599	601	10.5	97%
	2018	4,501	4,154	347	12.8	92%

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.10 With: Clause 3 of Schedule 11.4 From: 01-Oct-17 To: 31-May-18	Some records updated on the registry later than 10 business days. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	I have recorded the controls as strong in this area. The late new connection updates have a minor impact on participants, customers and settlement, therefore the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
LMGL have created a 'rolling' 3 month review diary entry to pull an EDA report of those sites that exceeded the time frame. This report will be sent to the 'causative party', normally the Test House, but for a high percentage of the sites in breach it has been one retailer and their approach to site work, nomination and advice to MEPs. This progress report will at least highlight how this affects LMGL and we will request a statement as to how improvements can be made.	Rolling 3 month review and report	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

The main issue is notification from traders and ATHs. LMGL continues to monitor as above and ensure that it has processes in place to immediately update metering installation information as soon as it is received. As noted above a rolling diary event for a report has been created.	Rolling 3 month review and report.	

4.11. Metering Infrastructure (Clause 10.39(1))

Code reference

Clause 10.39(1)

Code related audit information

The MEP must ensure that for each metering installation:

- *an appropriately designed metering infrastructure is in place*
- *each metering component is compatible with, and will not interfere with any other component in the installation*
- *collectively, all metering components integrate to provide a functioning system*
- *each metering installation is correctly and accurately integrated within the associated metering infrastructure.*

Audit observation

LMGL has some HHR metering. I checked the meter type to confirm whether the type test report recorded compatibility with regard to telecommunication standards and whether the overall infrastructure operated as intended.

Audit commentary

Type test reports confirm compatibility and the output to host test confirms the appropriate functionality of the system.

Audit outcome

Compliant

4.12. Responsibility for Metering at ICP (Clause 11.18B(3))

Code reference

Clause 11.18B(3)

Code related audit information

If an ICP is to be decommissioned, the MEP who is responsible for each metering installation for the ICP must:

- *advise the trader no later than three business days prior to decommissioning that the trader must, as part of the decommissioning, carry out a final interrogation; or*
- *if the MEP is responsible for the interrogation of the metering installation, arrange for a final interrogation to take place.*

Audit observation

I checked whether LMGL was the MEP at any decommissioned ICPs and whether notification had been provided to relevant traders.

Audit commentary

Some ICPs were decommissioned during the audit period. I checked five examples and in two cases, LMGL provided a reading to the trader. For the remaining three examples, the installations were decommissioned without LMGL's knowledge, therefore they are technically not compliant with the requirement to notify the trader.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.12 With: Clause 11.18B(3) From: 01-Oct-17 To: 30-Jun-18	Trader not notified to carry out a final interrogation for three ICPs. 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 recorded as strong because there are no process changes that would allow LMGL to have knowledge of upcoming decommissioning events in this situation. There is no impact on settlement or participants, therefore the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
LMGL is unsure as to how to address the issue as without notification it has no knowledge of the work undertaken.	Proposed or actual date	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
LMGL will send reminders to retailers and ATHs that decomms (as with other site updates) are to come through to the MEP so that LMGL can provide readings to the trader.	25/07/2018	

4.13. Measuring Transformer Burden and Compensation Requirements (Clause 31(4) and (5) of Schedule 10.7)

Code reference

Clause 31(4) and (5) of Schedule 10.7

Code related audit information

The MEP must, before approving the addition of, or change to, the burden or compensation factor of a measuring transformer in a metering installation, consult with the ATH who certified the metering installation.

If the MEP approves the addition of, or change to, the burden or compensation factor, it must ensure the metering installation is recertified by an ATH before the addition or change becomes effective.

Audit observation

I asked LMGL whether they had approved any burden changes during the audit period.

Audit commentary

LMGL's processes show that any action leading to a change in burden results in recertification. A check of certification records confirmed compliance.

Audit outcome

Compliant

4.14. Changes to Software ROM or Firmware (Clause 39(1) and 39(2) of Schedule 10.7)

Code reference

Clause 39(1) and 39(2) of Schedule 10.7

Code related audit information

The MEP must, if it proposes to change the software, ROM or firmware of a data storage device installed in a metering installation, ensure that, before the change is carried out, an approved test laboratory:

- *tests and confirms that the integrity of the measurement and logging of the data storage device would be unaffected*
- *documents the methodology and conditions necessary to implement the change*
- *advises the ATH that certified the metering installation of any change that might affect the accuracy of the data storage device.*

The MEP must, when implementing a change to the software, ROM or firmware of a data storage device installed in a metering installation:

- *carry out the change in accordance with the methodology and conditions identified by the approved test laboratory under clause 39(1)(b)*
- *keep a list of the data storage devices that were changed*
- *update the metering records for each installation affected with the details of the change and the methodology used.*

Audit observation

LMGL is not the MEP for any installations where changes to ROM, software or firmware have occurred.

Audit commentary

LMGL is not the MEP for any installations where changes to ROM, software or firmware have occurred.

Audit outcome

Not applicable

4.15. Temporary Energization (Clause 10.28(6))

Code reference

Clause 10.28(6)

Code related audit information

An MEP must not request the temporary energisation of a new POC unless authorised to do so by the reconciliation participant responsible for that POC and has an arrangement with that reconciliation participant to provide metering services.

Audit observation

I checked one example of insufficient load certification to determine whether there were any examples of temporary energisation for the purposes of testing.

Audit commentary

I checked one example of insufficient load certification to determine whether there were any examples of temporary energisation for the purposes of testing. None were identified.

Audit outcome

Not applicable

5. METERING RECORDS

5.1. Accurate and Complete Records (Clause 4(1)(a) and (b) of Schedule 10.6, and Table 1, Schedule 11.4)

Code reference

Clause 4(1)(a) and (b) of Schedule 10.6, and Table 1, Schedule 11.4

Code related audit information

The MEP must, for each metering installation for which it is responsible, keep accurate and complete records of the attributes set out in Table 1 of Schedule 11.4. These include:

- *a) the certification expiry date of each metering component in the metering installation*
- *b) all equipment used in relation to the metering installation, including serial numbers and details of the equipment's manufacturer*
- *c) the manufacturer's or (if different) most recent test certificate for each metering component in the metering installation*
- *d) the metering installation category and any metering installations certified at a lower category*
- *e) all certification reports and calibration reports showing dates tested, tests carried out, and test results for all metering components in the metering installation*
- *f) the contractor who installed each metering component in the metering installation*
- *g) the certification sticker, or equivalent details, for each metering component that is certified under Schedule 10.8 in the metering installation:*
- *h) any variations or use of the 'alternate certification' process*
- *i) seal identification information*
- *j) any applicable compensation factors*
- *k) the owner of each metering component within the metering installation*
- *l) any applications installed within each metering component*
- *m) the signed inspection report confirming that the metering installation complies with the requirements of Part 10.*

Audit observation

I requested certification records for 35 metering installations to evaluate compliance with this clause.

Audit commentary

LMGL engages with several ATHs to conduct certification activities. LMGL relies on these ATHs to act as agents for the management and storage of certification records.

I checked LMGL's records and I confirm that most of the records listed above are available. I requested certification records for 35 installations to confirm they were available and all 35 were provided. During the previous audit, I recommended LMGL discontinue their practice of using ATHs to act as agents for records management. LMGL does not intend to make this change.

Audit outcome

Compliant

5.2. Inspection Reports (Clause 4(2) of Schedule 10.6)

Code reference

Clause 4(2) of Schedule 10.6

Code related audit information

The MEP must, within 10 business days of receiving a request from a participant for a signed inspection report prepared under clause 44 of Schedule 10.7, make a copy of the report available to the participant.

Audit observation

I asked LMGL whether any requests had been made for copies of inspection reports.

Audit commentary

LMGL has not been requested to supply any inspection reports, but these are available and can be supplied on request.

Audit outcome

Compliant

5.3. Retention of Metering Records (Clause 4(3) of Schedule 10.6)

Code reference

Clause 4(3) of Schedule 10.6

Code related audit information

The MEP must keep metering installation records for 48 months after any metering component is removed, or any metering installation is decommissioned.

Audit observation

I checked LMGL's processes in relation to this clause.

Audit commentary

LMGL relies on ATHs to store certification records and their audit reports confirm compliance. The registry is used as the main database and it contains an appropriate audit trail with all history.

Audit outcome

Compliant

5.4. Provision of Records to ATH (Clause 6 Schedule 10.6)

Code reference

Clause 6 Schedule 10.6

Code related audit information

If the MEP contracts with an ATH to recertify a metering installation and the ATH did not previously certify the metering installation, the MEP must provide the ATH with a copy of all relevant metering records not later than 10 business days after the contract comes into effect.

Audit observation

LMGL has provided information to ATH's in the past and this may occur in future. There are no current examples to examine.

Audit commentary

LMGL has provided information to ATH's in the past and this may occur in future. There are no current examples to examine.

Audit outcome

Not applicable

6. MAINTENANCE OF REGISTRY INFORMATION

6.1. MEP Response to Switch Notification (Clause 1(1) of Schedule 11.4)

Code reference

Clause 1(1) of Schedule 11.4

Code related audit information

Within 10 business days of being advised by the registry that it is the gaining MEP for the metering installation for the ICP, the MEP must enter into an arrangement with the trader and advise the registry it accepts responsibility for the ICP and of the proposed date on which it will assume responsibility.

Audit observation

I checked the event detail report for the period 01/10/17 to 31/05/18 to confirm whether all responses were within 10 business days.

Audit commentary

All MN files were sent within 10 business days.

Audit outcome

Compliant

6.2. Provision of Registry Information (Clause 7 (1), (2) and (3) of Schedule 11.4)

Code reference

Clause 7 (1), (2) and (3) of Schedule 11.4

Code related audit information

The MEP must provide the information indicated as being 'required' in Table 1 of clause 7 of Schedule 11.4 to the registry, in the prescribed form for each metering installation for which the MEP is responsible.

From 1 April 2015, a MEP is required to ensure that all the registry metering records of its category 1 metering installations are complete, accurate, not misleading or deceptive, and not likely to mislead or deceive.

The information the MEP provides to the registry must derive from the metering equipment provider's records or the metering records contained within the current trader's system.

Audit observation

I checked the list file for 100% of records and I checked the Category 1 inspection records to identify discrepancies.

Audit commentary

I examined the records for 88 metering installations where LMGL had conducted inspections during 2017. The only data related issues were where the on-site certification date for three installations was unreadable because the sticker was faded, unreadable or missing.

I checked all of LMGL's records to identify discrepancies with their data. The table below shows the results.

	Quantity of ICPs			Issue	Resolved?
May 2018	**October 2017**	**Dec 2016**	**May 2016**		
0	0	82	1	Blank metering records on the registry.	N/A
5	0	0	5	Category 2 on the registry but with interim certification.	In progress
1	11	0	30	Incorrect certification duration.	Yes
0	2	2	4	Category 2 installations without CTs recorded on the registry.	N/A
423	2,067	53	233	ICPs with controlled load and no load control device recorded on the registry.	In progress
59	1,318	3	175	IN register content code but no control device on the registry.	In progress
8	9	16	101	ICPs with a register content code of CN only and a residential ANZSIC code	In progress
0	2	2	6	Day without night.	N/A
10	20	16	41	Night without day.	In progress
75	701	1,061	163	Controlled profiles without certified control device. Note that some of these may be controlled by pilot, which does not have a registry field.	In progress
248	259	311	1	Compensation factor of 3 None were certified after August 2013	In progress
0	0	0	1	HHR submission, Install is NHH	N/A
0	57	37	17	IN24	N/A
0	1	2	0	UN not 24	N/A
1	3	3	0	Incorrect certification dates	
1	48	3,311	0	Incorrect maximum interrogation cycle of zero	
511	840	-	-	Certification and expiry dates 01/04/00	In progress
2	3	-	-	Incorrect ATH recorded	
128	148	-	-	UN only with load control device	In progress
1	0	0	0	Compensation factor on Cat 1	

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.2 With: Clause 7 (1), (2) and (3) of Schedule 11.4 From: 01-Oct-17 To: 31-May-18	Some registry records incomplete or incorrect. Potential impact: Medium Actual impact: Low Audit history: Multiple times Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	I have recorded the controls as strong in this area. LMGL is identifying errors and investigating them as soon as practicable. Very few of the discrepancies have an impact on participants, customers or settlement. The only relevant ones in this regard are tariff related and there were only a small number. The audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
LMGL has corrected historical errors where found and is working with retailers to ensure that metering data is correct and fit for purpose. A big cause is where we get asked to reverse our updates so a Retailer can nominate another MEP who made a site change pre our work. The Registry records then site with the old incorrect data until the MEP makes their change.	Proposed or actual date	Identified
Preventative actions taken to ensure no further issues will occur	Completion date	
LMGL continues to modify and enhance its update processes to ensure that the business rules relating to the data provided to the registry are relevant and highlight (or disallow) errors in the metering data. We have requested a copy of the comparison-audit tool so that we can run our own reports of where discrepancies exist	Proposed or actual date	

6.3. Correction of Errors in Registry (Clause 6 of Schedule 11.4)

Code reference

Clause 6 of Schedule 11.4

Code related audit information

By 0900 hours on the 13th business day of each reconciliation period, the MEP must obtain from the registry:

- *a list of ICPs for the metering installations the MEP is responsible for*
- *the registry metering records for each ICP on that list.*

No later than five business days following collection of data from the registry, the MEP must compare the information obtained from the registry with the MEP's own records.

Within five business days of becoming aware of any discrepancy between the MEP's records and the information obtained from the registry, the MEP must correct the records that are in error and advise the registry of any necessary changes to the registry metering records.

Audit observation

The registry is LMGL's database of record for most installations. They don't have a complete separate system to validate the registry against.

Audit commentary

The registry is LMGL's database of record for most installations. They don't have a complete separate system to validate the registry against. This does not achieve compliance with the requirement to compare registry records against LMGL's own records.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.3 With: Clause 6 of Schedule 11.4 From: 01-Oct-17 To: 31-May-18	Registry records not compared to LMGL's records. Potential impact: Medium Actual impact: Unknown Audit history: None Controls: None Breach risk rating: 5
Audit risk rating	**Rationale for audit risk rating**
Low	LMGL does not have a process to compare the registry records against their own records. The impact on settlement and participants is unknown so I have recorded the audit risk rating as low.
Actions taken to resolve the issue	**Completion date** / **Remedial action status**

LMGL has established a database of the existing metering installations. This is now compared on a monthly basis with the data from the registry and historical workflow.	10/7/2018	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	This matter will be checked during the next audit and can potentially be cleared
LMGL has established a database of the existing metering installations. This is now compared on a monthly basis with the data from the registry and historical workflow.	Proposed or actual date	

6.4. Cancellation of Certification (Clause 20 of Schedule 10.7)

Code reference

Clause 20 of Schedule 10.7

Code related audit information

The certification of a metering installation is automatically cancelled on the date on which one of the following events takes place:

- *a) the metering installation is modified otherwise than under sub clause 19(3) or 19(6)*
- *b) the metering installation is classed as outside the applicable accuracy tolerances set out in Table 1 of Schedule 10.1, defective or not fit for purpose under this Part or any audit*
- *c) an ATH advises the metering equipment provider responsible for the metering installation of a reference standard or working standard used to certify the metering installation not being compliant with this Part at the time it was used to certify the metering installation, or the failure of a group of meters in the statistical sampling recertification process for the metering installation, or the failure of a certification test for the metering installation*
- *d) the manufacturer of a metering component in the metering installation determines that the metering component does not comply with the standards to which the metering component was tested*
- *e) an inspection of the metering installation, that is required under this Part, is not carried out in accordance with the relevant clauses of this Part*
- *f) if the metering installation has been determined to be a lower category under clause 6 and the maximum current conveyed through the metering installation at any time exceeds the current rating of its metering installation category as set out in Table 1 of Schedule 10.1*
- *g) the metering installation is certified under clause 14 and sufficient load is available for full certification testing and has not been retested under clause 14(4)*
- *h) a control device in the metering installation certification is, and remains for a period of at least 10 business days, bridged out under clause 35(1)*
- *i) the metering equipment provider responsible for the metering installation is advised by an ATH under clause 48(6)(b) that a seal has been removed or broken and the accuracy and continued integrity of the metering installation has been affected.*

A metering equipment provider must, within 10 business days of becoming aware that one of the events above has occurred in relation to a metering installation for which it is responsible, update the metering installation's certification expiry date in the registry.

Audit observation

I checked for examples of all of the points listed above, and checked whether certification had been cancelled, and whether the registry had been updated within 10 business days.

Audit commentary

I checked for examples of bridged control devices and I confirmed that they were resolved within 10 business days for a sample of two.

ICP 0001501996ENB0C has 1200/5 CTs and was certified as Category 2 on 12/05/17. There is no information confirming that protection is rated at 500A or less and it has a 500kVA transformer. Monitoring has not occurred; therefore, certification is cancelled from the date the first monitoring report was not obtained, which is June 2017. The registry has been updated with the correct certification expiry. This is the second time this installation has had cancelled certification for lack of monitoring, it was also cancelled for the previous MEP. Immediately on finding out that the certification LMGL was given was invalid, LMGL engaged with the Retailer, Test House, site tech, customer and Network Company. Upon the expected hurdle of customer alteration to site being encountered LMGL requested Genesis to pick up the baton to ensure their customer meets the rule requirements. This is very advanced as installation of site fuses and main switch capacity changes are almost complete and pending 'inspection'. **Note**: LMGL then expects to be losing this site to a smart meter; which was the reason another MEP did not pick this site up the first time around.

Two ICPs were certified by Delta using the comparative method and the temperature coefficient of the working standard was not considered in the uncertainty calculations. With the coefficient included the uncertainty will be greater than the allowable 0.6%, therefore certification is cancelled. The registry was not updated within 10 business days. LMGL has provided comments above and notes the response that Delta has made in their own audit response to this point. This issue is affecting all MEPs.

Alternative certification has been applied to three installations. The metering for ICP 0006593950RN692 is located up a pole and access cannot be gained to the CTs to conduct certification testing. ICPs 0000100223UN118 and 0103992006LCF3F have both had comparative certification conducted but alternative certification was applied. Clause 32(1) of schedule 10.7 states that alternative certification can only be applied if certification tests cannot be conducted *"…due solely to its inability to obtain physical access to test an installed measuring transformer in a metering installation…"* Access to the CTs is clearly available because comparative certification was conducted, therefore the installations are deemed defective and will need to be correctly re-certified. The clause goes on to say: *"If the Authority subsequently determines that the ATH could have obtained physical access to test an installed measuring transformer in the metering installation, the metering installation is deemed to be defective and the metering equipment provider responsible for the metering installation must comply with clauses 10.43 to 10.48*". The Authority communicated to LMGL on 21/02/18 their expectation that recertification would occur. Certification has not been cancelled and the requirements of clause 10.43 and 10.48 have not been followed. This is also non-compliance for the ATH. A further issue is that the in-service burden is too low, and the uncertainty calculations are not recorded. When the sites are recertified these matters will need to be addressed. Both error percentages were recorded as negative when they are in fact positive.

ICP 0000130696ENB89 was certified in accordance with the insufficient load provisions of the Code, but the installation is NHH and monitoring has therefore not been conducted, therefore certification is cancelled.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.4 With: Clause 20 of Schedule 10.7 From: 15-Jun-17 To: 30-Jun-18	Certification cancelled for six ICPs and the registry was not updated within 10 business days. Potential impact: Medium Actual impact: Medium Audit history: Once Controls: Weak Breach risk rating: 6
Audit risk rating	**Rationale for audit risk rating**
Medium	I have recorded the controls as weak because the issues identified in the last audit have not been addressed and more issues have arisen. The impact could be moderate due to the unknown accuracy of one ICP and the potential inaccuracy of those ICPs where uncertainty calculations were not conducted or were conducted incorrectly. The installation at ICP 0103992006LCF3F has an error of + 1.21%, which could be closer to zero with appropriate burdening of CTs. The audit risk rating is Medium.

Actions taken to resolve the issue	Completion date	Remedial action status
As advised LMGL cancelled the certification on 0001501996ENB0C. LMGL is actively working with the retailer (GENE) to establish the correct Category / Protection rating for the site. There has been considerable correspondence on this matter between the parties since 2017 when the issue was first identified. Note this is almost complete per the comments in the text above. With regard to the Delta temperature coefficient – LMGL is actively engaging with the Delta testhouse (specifically Bob Jones). At this stage they have advised that in their opinion the certification is still valid. Refer also to the last Audit report and Deltas comments in it on the EA website. With regard to 0000100223UN118 and 0103992006LCF3F, LMGL Immediately engaged with the Vircom-EMS Test House manager who agreed that the certification method should not have been employed. He has commenced a 'revisit Service Request' to solve the issue to get the two sites (which are next to each other) certified. We expect this within the month. This has been diaried.		Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	

LMGL will not recertify ENB0C until the appropriate protection rating or Category have been resolved. LMGL though will re-engage with the Retailer (Genesis) as to their ultimate intention as it is likely that VAMs will now pick up the site with the alteration work completed. LMGL will continue to engage with the Delta regarding the temperature coefficient. Delta have advised that they are working to change their process. This is on 'diary review'. On the Cat2 and above certifications, LMGL will look out for 'technician comments' that may invalidate the certification methods being described in the overall certification report even though the testhouse may supply a signed certificate.		

6.5. Registry Metering Records (Clause 11.8A)

Code reference

Clause 11.8A

Code related audit information

The MEP must provide the registry with the required metering information for each metering installation the MEP is responsible for and update the registry metering records in accordance with Schedule 11.4.

Audit observation

This clause refers to schedule 11.4 which is discussed in **Section 6.2**, apart from the requirement to provide information in the "prescribed form". I checked for examples of LMGL not using the prescribed form.

Audit commentary

This clause refers to schedule 11.4 which is discussed in **Section 6.2**, apart from the requirement to provide information in the "prescribed form". I checked for examples of LMGL not using the prescribed form and did not find any examples.

Audit outcome

Compliant

7. CERTIFICATION OF METERING INSTALLATIONS

7.1. Certification and Maintenance (Clause 10.38 (a), clause 1 and clause 15 of Schedule 10.7)

Code reference

Clause 10.38 (a), clause 1 and clause 15 of Schedule 10.7

Code related audit information

The MEP must obtain and maintain certification for all installations and metering components for which it is responsible. The MEP must ensure it:

- *performs regular maintenance, battery replacement, repair/replacement of components of the metering installations*
- *updates the metering records at the time of the maintenance*
- *has a recertification programme that will ensure that all installations are recertified prior to expiry.*

Audit observation

I conducted the following checks to identify metering installations with expired, cancelled or late certification:

- the registry PR255 report was checked to identify ICPs with expired certification
- the new connections process was checked by using the event detail report, PR255 and the list file to identify ICPs where the certification was not conducted within five business days of energisation
- I checked ICPs where certification was cancelled to ensure the registry was updated accordingly.

Audit commentary

The registry shows 23,226 ICPs have expired certification. The table below gives a breakdown of these.

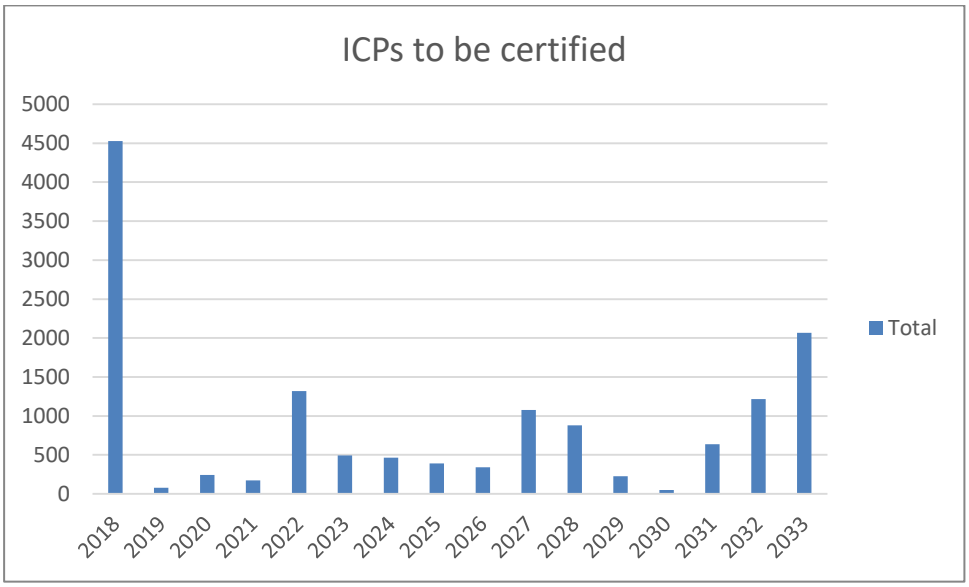
Quantity 2018	Quantity 2017	Details
19,445	21,943	Previously interim certified Category 1
2,929	3,305	Expired statistical certification
334	259	Expired full certification Category 1
8	20	Expired full certification Category 2
510	840	Cert date and cert expiry dates of 01/04/00
23,226	26,367	Total uncertified

LMGL is conducting statistical sampling for their Category 1 metering installations. The process has them all in the same population. 2,412 ICPs have been certified during the audit period from 01/10/17.

Certification had expired for eight Category 2 metering installations at the time the analysis was conducted. The status of the eight is shown in the table below.

ICP	Category	Cert date	Expiry date	Comments
0000202088DE02F	2	18-05-07	13-11-15	Inability to gain access due to asbestos.
0000932970TE58D	2	28-07-17	28-07-17	Certification dates have now been corrected.
0001050786AL8A8	2	18-03-08	18-03-18	Another MEP was nominated on 06/03/18.
0001501996ENB0C	2	12-05-17	12-05-17	Certification as a lower category is cancelled because monitoring was not conducted.
0004975515AL42A	2	06-05-08	06-05-18	Another MEP was nominated on 06/03/18.
0005711392AL2DB	2	20-05-08	20-05-18	The trader has not arranged access with the customer.
0005753252AL4E5	2	24-01-08	09-05-17	Another MEP was nominated on 06/03/18.
0006732690AL7BD	2	13-10-10	14-02-18	Another MEP was nominated on 06/03/18.

The graph below shows the certifications required in the next 15 years.



Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 7.1 With: Clause 10.38 (a), clause 1 and clause 15 of Schedule 10.7 From: 01-Oct-17 To: 30-Jun-18	Certification expired for 23,226 ICPs. Potential impact: High Actual impact: High Audit history: Multiple times Controls: Weak Breach risk rating: 6
Audit risk rating	**Rationale for audit risk rating**
Medium	Whilst a considerable amount of effort has gone into the certification program the results are not yet available, therefore I have recorded the control effectiveness as weak in this area because certification has been expired for a number of years for some ICPs and because some of the expired installations were fully certified at one point. The accuracy of the installed metering base is unknown until the statistical sampling is complete, however there is an impact on participants whenever one of these ICPs is reconnected; because the trader is then non-compliant for not ensuring certification occurs within five days of electrical connection.

Actions taken to resolve the issue	Completion date	Remedial action status
Of concern is the stat sampling programme of the main population. LMGL is engaging with the EA on the programme – however, damage resulting from poor logistics management is leading to a conclusion to recommence the main stat sampling programme. Considerable engagement, auditing, management meeting, proposals and planning have been undertaken in an effort to resolve this issue.		Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
LMGL proposes to recommence the main stat sampling programme with Vircom-EMS undertaking the management tasks and monitoring processes that they have committed to. LMGL has requested a 4-month sampling programme and estimates that approximately 2,000 sites will be required to be selected due to the high numbers of UTIs and asbestos boards.	31 December 2018	

7.2. Certification Tests (Clause 10.38(b) and clause 9 of Schedule 10.6)

Code reference

Clause 10.38(b) and clause 9 of Schedule 10.6

Code related audit information

For each metering component and metering installation an MEP is responsible for, the MEP must ensure that:

- *an ATH performs the appropriate certification and recertification tests*
- *the ATH has the appropriate scope of approval to certify and recertify the metering installation.*

Audit observation

I checked the certification records for 35 metering installations to confirm compliance. ATHs have shown that their processes include all tests, and reports confirm tests are completed.

Audit commentary

I confirm the appropriate tests are conducted and the results are recorded.

Audit outcome

Compliant

7.3. Active and Reactive Capability (Clause 10.37(1) and 10.37(2)(a))

Code reference

Clause 10.37(1) and 10.37(2)(a)

Code related audit information

For any category 2 or higher half-hour metering installation that is certified after 29 August 2013, the MEP must ensure that the installation has active and reactive measuring and recording capability.

Consumption only installations that is a category 3 metering installation or above must measure and separately record:

a) import active energy
b) import reactive energy
c) export reactive energy.

Consumption only installations that are a category 2 metering installation must measure and separately record import active energy.

All other installations must measure and separately record:

a) import active energy
b) export active energy
c) import reactive energy
d) export reactive energy.

All grid connected POCs with metering installations which are certified after 29 August 2013 should measure and separately record:

a) import active energy
b) export active energy
c) import reactive energy
d) export reactive energy

Audit observation

I checked the meter types on HHR installations to confirm compliance.

Audit commentary

All relevant metering components are compliant with this clause.

Audit outcome

Compliant

7.4. Local Service Metering (Clause 10.37(2)(b))

Code reference

Clause 10.37(2)(b)

Code related audit information

The accuracy of each local service metering installation in grid substations must be within the tolerances set out in Table 1 of Schedule 10.1.

Audit observation

This clause relates to Transpower as an MEP.

Audit commentary

This clause relates to Transpower as an MEP.

Audit outcome

Not applicable

7.5. Measuring Transformer Burden (Clause 30(1) and 31(2) of Schedule 10.7)

Code reference

Clause 30(1) and 31(2) of Schedule 10.7

Code related audit information

The MEP must not permit a measuring transformer to be connected to equipment used for a purpose other than metering, unless it is not practical for the equipment to have a separate measuring transformer.

The MEP must ensure that a change to, or addition of, a measuring transformer burden or a compensation factor related to a measuring transformer is carried out only by:

a) the ATH who most recently certified the metering installation
b) for a POC to the grid, by a suitably qualified person approved by both the MEP and the ATH who most recently certified the metering installation.

Audit observation

I asked LMGL if there were any examples of burden changes or the addition of non-metering equipment being connected to metering CTs.

Audit commentary

There are no examples of burden changes having occurred.

Audit outcome

Not applicable

7.6. Certification as a Lower Category (Clauses 6(1)(b) and (d), and 6(2)(b) of Schedule 10.7)

Code reference

Clauses 6(1)(b) and (d), and 6(2)(b) of Schedule 10.7

Code related audit information

A category 2 or higher metering installation may be certified by an ATH at a lower category than would be indicated solely on the primary rating of the current if the MEP, based on historical metering data, reasonably believes that:

- *the maximum current will at all times during the intended certification period be lower than the current setting of the protection device for the category for which the metering installation is certified, or is required to be certified by the Code; or*
- *the metering installation will use less than 0.5 GWh in any 12-month period.*

If a metering installation is categorised under clause 6(1)(b), the ATH may, if it considers appropriate, and, at the MEP's request, determine the metering installation's category according to the metering installation's expected maximum current.

If a meter is certified in this manner:

- *the MEP must, each month, obtain a report from the participant interrogating the metering installation, which details the maximum current from raw meter data from the metering installation by either calculation from the kVA by trading period, if available, or from a maximum current indicator if fitted in the metering installation conveyed through the point of connection for the prior month; and*
- *if the MEP does not receive a report, or the report demonstrates that the maximum current conveyed through the POC was higher than permitted for the metering installation category it is certified for, then the certification for the metering installation is automatically cancelled.*

Audit observation

I checked all ICPs for examples where the CT ratio was above the threshold to confirm that protection was appropriate or that monitoring was in place.

Audit commentary

ICP 0001501996ENB0C has 1200/5 CTs and was certified as Category 2 on 12/05/17. There is no information confirming that protection is rated at 500A or less and it has a 500kVA transformer. Monitoring has not occurred; therefore, certification is cancelled from the date the first monitoring report was not obtained, which is June 2017. The registry has been updated with the correct certification expiry. This is the second time this installation has had cancelled certification for lack of monitoring, it was cancelled for the previous MEP. This installation has not yet been recertified. There are no other examples of certification as a lower category.

Audit outcome

Compliant

7.7. Insufficient Load for Certification Tests (Clauses 14(3) and (4) of Schedule 10.7)

Code reference

Clauses 14(3) and (4) of Schedule 10.7

Code related audit information

If there is insufficient electricity conveyed through a POC to allow the ATH to complete a prevailing load test for a metering installation that is being certified as a half hour meter and the ATH certifies the metering installation the MEP must:

- *obtain and monitor raw meter data from the metering installation at least once each calendar month to determine if load during the month is sufficient for a prevailing load test to be completed:*
- *if there is sufficient load, arrange for an ATH to complete the tests (within 20 business days).*

Audit observation

I checked if there were any examples of Insufficient load certifications.

Audit commentary

ICP 0000130696ENB89 was certified in accordance with the insufficient load provisions of the Code, but the installation is NHH and monitoring has therefore not been conducted. Certification is cancelled because monitoring was not conducted.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 7.7 With: Clauses 14(3) and (4) of Schedule 10.7 From: 09-Feb-18 To: 30-Jun-18	ICP 0000130696ENB89 certified for insufficient load but monitoring not conducted. Potential impact: Medium Actual impact: Unknown Audit history: None Controls: None Breach risk rating: 5
Audit risk rating	**Rationale for audit risk rating**
Low	There is no process in place to identify and monitor ICPs with insufficient load certification. The impact on settlement and participants is unknown, therefore the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
The ATH (Vircom) produced signed certification (VC00209) for insufficient load. This should not have been provided in the first place. LMGL has requested that Vircom return to site and certify (with load)		Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
LMLG has formally requested of Vircom that they carry a load bank so they can load test Cat2 sites for certification. This appears to be an issue ONLY with Vircom as Delta have load banks for these situations.		

7.8. Insufficient Load for Certification – Cancellation of Certification (Clause 14(6) of Schedule 10.7)

Code reference

Clause 14(6) of Schedule 10.7

Code related audit information

If the tests conducted under clause 14(4) of Schedule 10.7 demonstrate that the metering installation is not within the relevant maximum permitted error:

- *the metering installation certification is automatically revoked:*
- *the certifying ATH must advise the MEP of the cancellation within one business day:*
- *the MEP must follow the procedure for handling faulty metering installations (clause 10.43 - 10.48).*

Audit observation

The testing has not been conducted for ICP 0000130696ENB89 and recertification must occur.

Audit commentary

The testing has not been conducted for ICP 0000130696ENB89 and recertification must occur.

Audit outcome

Compliant

7.9. Alternative Certification Requirements (Clauses 32(2), (3) and (4) of Schedule 10.7)

Code reference

Clauses 32(2), (3) and (4) of Schedule 10.7

Code related audit information

If an ATH cannot comply with the requirements to certify a metering installation due to measuring transformer access issues, and therefore certifies the metering installation in accordance with clause 32(1) of Schedule 10.7, the MEP must:

- *advise the market administrator, by no later than 10 business days after the date of certification of the metering installation, of the details in clause 32(2)(a) of Schedule 10.7*
- *respond, within five business days, to any requests from the market administrator for additional information*

- *ensure that all of the details are recorded in the metering installation certification report*
- *take all steps to ensure that the metering installation is certified before the certification expiry date.*

If the market administrator determines the ATH could have obtained access the metering installation is deemed to be defective and the MEP must follow the process of handling faults metering installations in clauses 10.43 to 10.48.

Audit observation

I checked the registry records to confirm whether alternative certification had been applied and I checked the records for all three installations.

Audit commentary

Alternative certification has been applied to three installations. The metering for ICP 0006593950RN692 is located up a pole and access cannot be gained to the CTs to conduct certification testing. ICPs 0000100223UN118 and 0103992006LCF3F have both had comparative certification conducted but alternative certification was applied. Clause 32(1) of schedule 10.7 states that alternative certification can only be applied if certification tests cannot be conducted *"…due solely to its inability to obtain physical access to test an installed measuring transformer in a metering installation…"* Access to the CTs is clearly available because comparative certification was conducted, therefore the installations are deemed defective and will need to be correctly re-certified. The clause goes on to say: *"If the Authority subsequently determines that the ATH could have obtained physical access to test an installed measuring transformer in the metering installation, the metering installation is deemed to be defective and the metering equipment provider responsible for the metering installation must comply with clauses 10.43 to 10.48*". The Authority communicated to LMGL on 21/02/18 their expectation that recertification would occur. Certification has not been cancelled and the requirements of clause 10.43 and 10.48 have not been followed. This is also non-compliance for the ATH. A further issue is that the in-service burden is too low, and the uncertainty calculations are not recorded. When the sites are recertified these matters will need to be addressed. Both error percentages were recorded as negative when they are in fact positive.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 7.9 With: Clauses 32(2), (3) and (4) of Schedule 10.7 From: 15-Jun-17 To: 30-Jun-18	Invalid alternative certification applied Potential impact: Medium Actual impact: Low Audit history: None Controls: Weak Breach risk rating: 3
Audit risk rating	**Rationale for audit risk rating**
Low	I have recorded the controls as weak because alternative certification should not have been applied to these installations and the Code clearly only allows one reason for the application of alternative certification. The test results show that the installations are both within 2.5% but one is over recording by 1.21% and this may be closer to zero once the low burden issue is addressed. The audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
Note the comments in the pages above where this 'audit finding' was previously raised.		Identified
Preventative actions taken to ensure no further issues will occur	Completion date	
Note the comments in the pages above where this 'audit finding' was previously raised.		

7.10. Timekeeping Requirements (Clause 23 of Schedule 10.7)

Code reference

Clause 23 of Schedule 10.7

Code related audit information

If a time keeping device that is not remotely monitored and corrected controls the switching of a meter register in a metering installation, the MEP must ensure that the time keeping device:

a) has a time keeping error of not greater than an average of two seconds per day over a period of 12 months
b) is monitored and corrected at least once every 12 months.

Audit observation

I asked LMGL whether there were any metering installations with timeclocks.

Audit commentary

LMGL confirmed there are no installations with timeclocks.

Audit outcome

Not applicable

7.11. Control Device Bridged Out (Clause 35 of Schedule 10.7)

Code reference

Clause 35 of Schedule 10.7

Code related audit information

The participant must, within 10 business days of bridging out a control device or becoming aware of a control device being bridged out, notify the following parties:

- *the relevant reconciliation participant*
- *the relevant metering equipment provider.*

If the control device is used for reconciliation, the metering installation is considered defective in accordance with 10.43

Audit observation

I checked the process for the management of bridged control devices and I checked whether any notifications were required to other parties.

Audit commentary

LMGL has a process for dealing with control devices which have been bridged out. If any are bridged out for more than 10 business days, they notify as required by this clause. I checked two examples and the appropriate notification was provided.

Audit outcome

Compliant

7.12. Control Device Reliability Requirements (Clause 34(5) of Schedule 10.7)

Code reference

Clause 34(5) of Schedule 10.7

Code related audit information

If the MEP is advised by an ATH that the likelihood of a control device not receiving signals would affect the accuracy or completeness of the information for the purposes of Part 15, the MEP must, within three business days inform the following parties of the ATH's determination (including all relevant details):

a) the reconciliation participant for the POC for the metering installation
b) the control signal provider.

Audit observation

I checked the steps LMGL had taken to identify regions with signal propagation issues.

Audit commentary

LMGL has not been advised of any areas by the ATHs.

Audit outcome

Compliant

7.13. Statistical Sampling (Clauses 16(1) and (5) of Schedule 10.7)

Code reference

Clauses 16(1) and (5) of Schedule 10.7

Code related audit information

The MEP may arrange for an ATH to recertify a group of category 1 metering installations for which the MEP is responsible using a statistical sampling process.

The MEP must update the registry in accordance with Part 11 on the advice of an ATH as to whether the group meets the recertification requirements.

Audit observation

I checked whether statistical sampling had occurred during the audit period.

Audit commentary

LMGL is in the process of conducting statistical sampling for their Category 1 population but the results are not yet finalised. LMGL is experiencing a very high turn down rate for this exercise of over 50%.

Audit outcome

Compliant

7.14. Compensation Factors (Clause 24(3) of Schedule 10.7)

Code reference

Clause 24(3) of Schedule 10.7

Code related audit information

If a compensation factor must be applied to a metering installation that is an NSP, the MEP must advise the reconciliation participant responsible for the metering installation of the compensation factor within 10 days of certification of the installation.

In all other cases the MEP must advise the registry of the compensation factor.

Audit observation

I checked the records for 15 Category 2 metering installations to confirm that compensation factors were correctly recorded on the registry.

Audit commentary

The compensation factors were correct for all 15 metering installations.

Audit outcome

Compliant

7.15. Metering Installations Incorporating a Meter (Clause 26(1) of Schedule 10.7)

Code reference

Clause 26(1) of Schedule 10.7

Code related audit information

The MEP must ensure that each meter in a metering installation it is responsible for is certified.

Audit observation

I checked the certification records for 35 metering installations to confirm compliance.

Audit commentary

Meters were certified for all 35 metering installations.

Audit outcome

Compliant

7.16. Metering Installations Incorporating a Measuring Transformer (Clause 28(1) of Schedule 10.7)

Code reference

Clause 28(1) of Schedule 10.7

Code related audit information

The MEP must ensure that each measuring transformer in a metering installation it is responsible for is certified.

Audit observation

I checked the certification records for 15 metering installations to confirm compliance.

Audit commentary

Measuring transformer certification records were provided for all metering installations.

Audit outcome

Compliant

7.17. Metering Installations Incorporating a Data Storage Device (Clause 36(1) of Schedule 10.7)

Code reference

Clause 36(1) of Schedule 10.7

Code related audit information

The MEP must ensure that each data storage device in a metering installation it is responsible for is certified.

Audit observation

I checked the certification records for 35 metering installations to confirm compliance.

Audit commentary

Data storage devices were certified for all relevant metering installations.

Audit outcome

Compliant

7.18. Notification of ATH Approval (Clause 7 (3) Schedule 10.3)

Code reference

Clause 7 (3) Schedule 10.3

Code related audit information

If the MEP is notified by the Authority that an ATH's approval has expired, been cancelled or been revised, the MEP must treat all metering installations certified by the ATH during the period where the ATH was not approved to perform the activities as being defective and follow the procedures set out in 10.43 to 10.48.

Audit observation

I checked the ATH register to confirm compliance.

Audit commentary

All relevant ATHs have appropriate approval.

Audit outcome

Compliant

7.19. Interim Certification (Clause 18 of Schedule 10.7)

Code reference

Clause 18 of Schedule 10.7

Code related audit information

The MEP must ensure that each interim certified metering installation on 28 August 2013 is certified by no later than 1 April 2015.

Audit observation

I checked the registry records to identify previously interim certified installations.

Audit commentary

LMGL was not the MEP when the installations expired so I have not recorded non-compliance with this specific clause.

Audit outcome

Not applicable

8. INSPECTION OF METERING INSTALLATIONS

8.1. Category 1 Inspections (Clause 45 of Schedule 10.7)

Code reference

Clause 45 of Schedule 10.7

Code related audit information

The MEP must ensure that category 1 metering installations (other than interim certified metering installations):

- *have been inspected by an ATH within 120 months from the date of the metering installation's most recent certification or*
- *for each 12-month period, commencing 1 January and ending 31 December, a sample of the category 1 metering installations selected under clause 45(2) of Schedule 10.7 has been inspected by an ATH.*

Before a sample inspection process can be carried out, the MEP must submit a documented process for selecting the sample to the Electricity Authority, at least two months prior to first date on which the inspections are to be carried out, for approval (and promptly provide any other information the Authority may request).

The MEP must not inspect a sample unless the Authority has approved the documented process.

The MEP must, for each inspection conducted under clause 45(1)(b), keep records detailing:

- *any defects identified that have affected the accuracy or integrity of the raw meter data recorded by the metering installation*
- *any discrepancies identified under clause 44(5)(b)*
- *relevant characteristics, sufficient to enable reporting of correlations or relationships between inaccuracy and characteristics*
- *the procedure used, and the lists generated, to select the sample under clause 45(2).*

The MEP must, if it believes a metering installation that has been inspected is or could be inaccurate, defective or not fit for purpose:

- *comply with clause 10.43*
- *arrange for an ATH to recertify the metering installation if the metering is found to be inaccurate under Table 1 of Schedule 10.1, or defective or not fit for purpose.*

The MEP must by 1 April in each year, provide the Authority with a report that states whether the MEP has, for the previous 1 January to 31 December period, arranged for an ATH to inspect each category 1 metering installation for which it is responsible under clause 45(1)(a) or 45(1)(b).

This report must include the matters specified in clauses 45(8)(a) and (b).

If the MEP is advised by the Authority that the tests do not meet the requirements under clause 45(9) of Schedule 10.7, the MEP must select the additional sample under that clause, carry out the required inspections, and report to the Authority, within 40 business days of being advised by the Authority.

Audit observation

I checked the process, and the results for the Category 1 inspection regime to confirm compliance.

Audit commentary

LMGL has conducted category 1 inspections by statistical sample in accordance with this clause. The process for selection of the sample was approved by the Authority; the field process was compliant. The records were checked, and appropriate reporting was provided to the Authority.

Audit outcome

Compliant

8.2. Category 2 to 5 Inspections (Clause 46(1) of Schedule 10.7)

Code reference

Clause 46(1) of Schedule 10.7

Code related audit information

The MEP must ensure that each category 2 or higher metering installation is inspected by an ATH at least once within the applicable period. The applicable period begins from the date of the metering installation's most recent certification and extends to:

- *120 months for Category 2*
- *60 months for Category 3*
- *30 months for Category 4*
- *18 months for Category 5.*

Audit observation

I checked the registry information to confirm which ICPs were due for inspection. There were no category 2 metering installations due for inspection.

Audit commentary

I checked the registry information to confirm which ICPs were due for inspection. There were no category 2 metering installations due for inspection.

Audit outcome

Not applicable

8.3. Inspection Reports (Clause 44(5) of Schedule 10.7)

Code reference

Clause 44(5) of Schedule 10.7

Code related audit information

The MEP must, within 20 business days of receiving an inspection report from an ATH:

- *undertake a comparison of the information received with its own records*
- *investigate and correct any discrepancies*
- *update the metering records in the registry.*

Audit observation

I checked the process and results from inspection regimes to ensure any incorrect records were updated.

Audit commentary

LMGL checked the relevant details during inspections and I observed evidence that updates had occurred where discrepancies were found.

Audit outcome

Compliant

8.4. Broken or removed seals (Clause 48(4) and (5) of Schedule 10.7)

Code reference

Clause 48(4) and (5) of Schedule 10.7

Code related audit information

If the MEP is advised of a broken or removed seal it must use reasonable endeavours to determine

a) who removed or broke the seal
b) the reason for the removal or breakage

and arrange for an ATH to carry out an inspection of the removal or breakage and determine any work required to remedy the removal or breakage.

The MEP must make the above arrangements within

a) three business days, if the metering installation is category 3 or higher
b) 10 business days if the metering installation is category 2
c) 20 business days if the metering installation is category 1.

Audit observation

I checked all examples of notification of missing seals, which were all as a result of inspection processes or notification by field technicians.

Audit commentary

I checked 51 examples of seals found missing. Appropriate notification was provided in all cases.

Audit outcome

Compliant

9. PROCESS FOR HANDLING FAULTY METERING INSTALLATIONS

9.1. Investigation of Faulty Metering Installations (Clause 10.43(4) and (5))

Code reference

Clause 10.43(4) and (5)

Code related audit information

If the MEP is advised or becomes aware that a metering installation may be inaccurate, defective, or not fit for purpose, it must investigate and report on the situation to all affected participants as soon as reasonably practicable after becoming aware of the information, but no later than;

a) 20 business days for Category 1,
b) 10 business days for Category 2 and
c) 5 business days for Category 3 or higher.

Audit observation

I checked five examples where LMGL had become aware of faulty metering installations.

Audit commentary

The notification occurred within the allowable timeframes in all cases.

Audit outcome

Compliant

9.2. Testing of Faulty Metering Installations (Clause 10.44)

Code reference

Clause 10.44

Code related audit information

If a report prepared under clause 10.43(4)(c) demonstrates that a metering installation is inaccurate, defective, or not fit for purpose, the MEP must arrange for an ATH to test the metering installation and provide a 'statement of situation'.

If the MEP is advised by a participant under clause 10.44(2)(a) that the participant disagrees with the report that demonstrates that the metering installation is accurate, not defective and fit for purpose, the MEP must arrange for an ATH to:

a) test the metering installation
b) provide the MEP with a statement of situation within five business days of:
c) becoming aware that the metering installation may be inaccurate, defective or not fit for purpose; or
d) reaching an agreement with the participant.

The MEP is responsible for ensuring the ATH carries out testing as soon as practicable and provides a statement of situation.

Audit observation

I checked five examples where LMGL had become aware of faulty metering installations.

Audit commentary

The notification occurred within the allowable timeframes in all cases.

Audit outcome

Compliant

9.3. Statement of Situation (Clause10.46(2))

Code reference

Clause 10.46(2)

Code related audit information

Within three business days of receiving the statement from the ATH, the MEP must provide copies of the statement to:

- *the relevant affected participants*
- *the market administrator (for all category 3 and above metering installations and any category 1 and category 2 metering installations) on request.*

Audit observation

I checked five examples where LMGL had become aware of faulty metering installations.

Audit commentary

The statements of situation were provided within the allowable thresholds.

Audit outcome

Compliant

10. ACCESS TO AND PROVISION OF RAW METER DATA AND METERING INSTALLATIONS

10.1. Access to Raw Meter Data (Clause 1 of Schedule 10.6)

Code reference

Clause 1 of Schedule 10.6

Code related audit information

The MEP must give authorised parties access to raw meter data within 10 business days of receiving the authorised party making a request.

The MEP must only give access to raw meter data to a trader or person, if that trader or person has entered into a contract to collect, obtain, and use the raw meter data with the end customer.

The MEP must provide the following when giving a party access to information:

a) the raw meter data; or
b) the means (codes, keys etc.) to enable the party to access the raw meter data.

The MEP must, when providing raw meter data or access to an authorised person use appropriate procedures to ensure that:

- *the raw meter data is received only by that authorised person or a contractor to the person*
- *the security of the raw meter data and the metering installation is maintained*
- *access to the raw meter data is limited to only the specific raw meter data under clause 1(7)(c) of Schedule 10.6.*

Audit observation

I checked whether any parties had requested access to raw meter data.

Audit commentary

No requests have been received, but LMGL advised access could be granted in accordance with this clause if necessary.

Audit outcome

Compliant

10.2. Restrictions on Use of Raw Meter Data (Clause 2 of Schedule 10.6)

Code reference

Clause 2 of Schedule 10.6

Code related audit information

The MEP must not give an authorised person access to raw meter data if to do so would breach clause 2(1) of Schedule 10.6.

Audit observation

I checked whether any parties had requested access to raw meter data.

Audit commentary

No requests have been received, but LMGL advised access could be granted in accordance with this clause if necessary.

Audit outcome

Compliant

10.3. Access to Metering Installations (Clause 3(1), (3) and (4) of Schedule 10.6)

Code reference

Clause 3(1), (3) and (4) of Schedule 10.6

Code related audit information

The MEP must within 10 business days of receiving a request from one of the following parties, arrange physical access to each component in a metering installation:

- *a relevant reconciliation participant with whom it has an arrangement (other than a trader)*
- *the Authority*
- *an ATH*
- *an auditor*
- *a gaining MEP.*

This access must include all necessary means to enable the party to access the metering components

When providing access, the MEP must ensure that the security of the metering installation is maintained, and physical access is limited to only the access required for the purposes of the Code, regulations in connection with the party's administration, audit and testing functions.

Audit observation

I checked whether any parties had requested access to metering installations.

Audit commentary

No requests have been received, but LMGL advised access could be granted in accordance with this clause if necessary.

Audit outcome

Compliant

10.4. Urgent Access to Metering Installations (Clause 3(5) of Schedule 10.6)

Code reference

Clause 3(5) of Schedule 10.6

Code related audit information

If the party requires urgent physical access to a metering installation, the MEP must use its best endeavours to arrange physical access.

Audit observation

I checked whether any parties had requested access to metering installations.

Audit commentary

No requests have been received, but LMGL advised access could be granted in accordance with this clause if necessary.

Audit outcome

Compliant

10.5. Electronic Interrogation of Metering Installations (Clause 8 of Schedule 10.6)

Code reference

Clause 8 of Schedule 10.6

Code related audit information

When raw meter data can only be obtained from an MEP's back office, the MEP must

- *ensure that the interrogation cycle does not exceed the maximum interrogation cycle shown in the registry*
- *interrogate the metering installation at least once within each maximum interrogation cycle.*

When raw meter data can only be obtained from an MEP's back office, the MEP must ensure that the internal clock is accurate, to within ±5 seconds of:

- *New Zealand standard time; or*
- *New Zealand daylight time.*

When raw meter data can only be obtained from an MEP's back office, the MEP must record in the interrogation and processing system logs, the time, the date, and the extent of any change in the internal clock setting in the metering installation.

When raw meter data can only be obtained from an MEP's back office, the MEP must ensure that a data storage device in a metering installation does not exceed the maximum time error set out in Table 1 of clause 8(5) of Schedule 10.6.

The MEP must compare the time on the internal clock of the data storage device with the time on the interrogation and processing system clock, calculate and correct (if required by this provision) any time error, and advise the affected reconciliation participant.

When raw meter data can only be obtained from an MEP's back office, the MEP must, when interrogating a metering installation, download the event log, check the event log for evidence of malfunctioning or tampering, and if this is detected, carry out the appropriate requirements of Part 10.

The MEP must ensure that all raw meter data that can only be obtained from the MEPs back office, that is downloaded as part of an interrogation, and that is used for submitting information for the purpose of Part 15 is archived:

- *for no less than 48 months after the interrogation date*
- *in a form that cannot be modified without creating an audit trail*
- *in a form that is secure and prevents access by any unauthorised person*

in a form that is accessible to authorised personnel.

Audit observation

LMGL is not the MEP for AMI metering installations and does not conduct data collection as an MEP.

Audit commentary

LMGL is not the MEP for AMI metering installations and does not conduct data collection as an MEP.

Audit outcome

Not applicable

10.6. Security of Metering Data (Clause 10.15(2))

Code reference

Clause 10.15(2)

Code related audit information

The MEP must take reasonable security measures to prevent loss or unauthorised access, use, modification or disclosure of the metering data.

Audit observation

I checked the security and storage of data by looking at examples of data more than 48 months old.

Audit commentary

All data is secure, and any transmission is via FTP.

Audit outcome

Compliant

10.7. Time Errors for Metering Installations (Clause 8(4) of Schedule 10.6)

Code reference

Clause 8(4) of Schedule 10.6

Code related audit information

When raw meter data can only be obtained from the MEPs back office, the MEP must ensure that the data storage device it interrogates does not exceed the maximum time error set out in Table 1 of clause 8(5) of Schedule 10.6.

Audit observation

LMGL is not the MEP for AMI metering installations.

Audit commentary

LMGL is not the MEP for AMI metering installations.

Audit outcome

Not applicable

10.8. Event Logs (Clause 8(7) of Schedule 10.6)

Code reference

Clause 8(7) of Schedule 10.6

Code related audit information

When raw meter data can only be obtained from the MEP's back office, the MEP must, when interrogating a metering installation:

- *a) ensure an interrogation log is generated*
- *b) review the event log and:*
  - *i. take appropriate action*
  - *ii. pass the relevant entries to the reconciliation participant.*
- *c) ensure the log forms part of an audit trail which includes:*
  - *i. the date and*

ii. *time of the interrogation*
iii. *operator (where available)*
iv. *unique ID of the data storage device*
v. *any clock errors outside specified limits*
vi. *method of interrogation*
vii. *identifier of the reading device used (if applicable).*

Audit observation

LMGL is not the MEP for AMI metering installations.

Audit commentary

LMGL is not the MEP for AMI metering installations.

Audit outcome

Not applicable

10.9. Comparison of HHR Data with Register Data (Clause 8(9) of Schedule 10.6)

Code reference

Clause 8(9) of Schedule 10.6

Code related audit information

When raw meter data can only be obtained from the MEP's back office, the MEP must ensure that each electronic interrogation that retrieves half-hour metering information compares the information against the increment of the metering installations accumulating meter registers.

Audit observation

LMGL is not the MEP for AMI HHR metering installations.

Audit commentary

LMGL is not the MEP for AMI HHR metering installations.

Audit outcome

Not applicable

10.10. Correction of Raw Meter Data (Clause 10.48(2),(3))

Code reference

Clause 10.48(2),(3)

Code related audit information

If the MEP is notified of a question or request for clarification in accordance with clause 10.48(1), the MEP must, within 10 business days:

- *respond in detail to the questions or requests for clarification*
- *advise the reconciliation participant responsible for providing submission information for the POC of the correction factors to apply and period the factors should apply to.*

Audit observation

LMGL has not received any requests in relation to this clause.

Audit commentary

LMGL has not received any requests in relation to this clause.

Audit outcome

Not applicable

CONCLUSION

The audit identified 11 non-compliances.

There are 23,226 ICPs where the metering installation certification has expired. 342 of these previously had full certification and eight of the 342 are Category 2. LMGL is conducting statistical sampling of their entire Category 1 population; however, this program is not yet complete for two main reasons. A significant proportion of meter replacements were unable to be completed due to health and safety or access reasons, leading to delays in getting the required number of meters to the test laboratory, and it was recently discovered that many of the boxes of meters delivered to the laboratory had not been appropriately transported. This second point may result in meters being discarded with additional examples being sought from the field.

Several issues were found with certification practices, as follows:

5. During the previous audit it was recorded that one ICP was certified as a lower category but monitoring was not conducted, leading to the certification being cancelled. Recertification has not yet occurred. It should be noted that the immediate actions taken by LMGL sees 'alterations at site' in an advanced state. LMGL expects to lose this site to a smart meter MEP upon the final inspection process concluding.
6. During the previous audit, invalid alternative certification was applied to two metering installations, where the comparative certification process was used, confirming that access could be obtained to the measuring transformers. Alternative certification can only be applied where access cannot be obtained to the measuring transformers. The installations have not been recertified and the registry has not been updated with the correct information.
7. Several Category 2 installations were certified using the comparative method but the uncertainty calculations did not take temperature into account and two are likely to have uncertainties outside the allowable 0.6%.
8. One installation was certified for insufficient load, but it is NHH and monitoring is not conducted.

What is pleasing to see is improvements in data accuracy at sites acquired by LMGL and the speed at which resolutions to identified issues have been cleared.

PARTICIPANT RESPONSE

LMGL has been working actively with all participants (ATHs and retailers especially) in a genuine effort to ensure quality and timely data is provided to the registry and to the market.

Anecdotally LMGL is gaining a reputation in the industry to prompt and accurate responses to queries as well as a willingness to accept and resolve otherwise "unresolvable" issues. This is demonstrated in the ongoing general improvement from one audit report to the next.

As described earlier in this report, of concern (and disappointment) is that Statistical Sampling programme that has been poorly managed by the main ATH. This has resulted is large numbers of meters being delivered damaged to the test lab, meters scrapped, and meters lost. There has been no real management oversight or visibility of the programme from the ATH and the resulting escalations by LMGL have only recently resulted in a proposed commitment to actively manage and monitor the work. LMGL was actively engaging with operations people and ATH management as to findings, problems, concerns and ongoingexpectated resolutions.

This work has also been severely impacted by the very high number of sites where meters could not be removed (subject of an earlier report to the EA). LMGL had 1192 sites attended in order to recover

metering from 500. It now appears that test labs are refusing to test meters that have been recovered from asbestos boards.

Following up on the data issues highlighted, LMGL is engaging with the retailers especially to ensure that tariffing information is correct and is undertaking site visits (and meter changes to achieve certification) where there is uncertainty on a site.

LMGL is continuing to work diligently to achieve a high degree of compliance and accuracy in all activities that it undertakes and is keen to continue to use the feedback and advice from the audits to improve on the information and metering for which it is responsible. LMGL is having an open discovery session with the EA management to reveal the examples uncovered and report on the findings so that bigger picture decisions can be made.