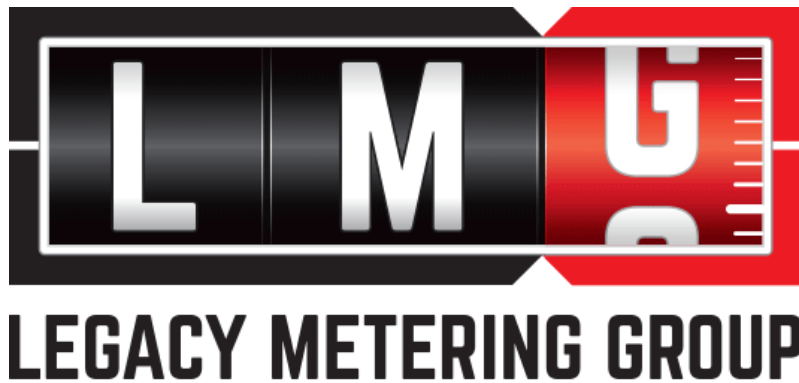


**ELECTRICITY INDUSTRY PARTICIPATION CODE
METERING EQUIPMENT PROVIDER AUDIT REPORT**

For



Prepared by: Steve Woods – Veritek Limited

Date audit commenced: 10 October 2017

Date audit report completed: 31 October 2017

Audit report due date: 01-Nov-17

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EXECUTIVE SUMMARY

Legacy Metering Group Limited (LMGL) is a Metering Equipment Provider (MEP) and is required to undergo an audit by 08/10/17, in accordance with clause 1(1)(b) of schedule 10.5.

The audit identified 13 non-compliances and two recommendations are made.

LMGL has made sound progress with regard to registry discrepancies. Most of the outstanding issues relate to load control device information or register content codes and period of availability. There are 259 three phase metering installations where only one phase is metered. Three phase meters will need to be installed to achieve compliance.

There are 26,267 ICPs where the metering installation certification has expired. 279 of these previously had full certification and 20 of the 279 are Category 2. LMGL is conducting statistical sampling of their entire Category 1 population.

One ICP was certified as a lower category but monitoring was not conducted, leading to the certification being cancelled. Certification was cancelled for the previous MEP for the same reason.

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.

Six non-compliances relate to Approved Test House (ATH) practices or record keeping. These issues have been present for at least four years for the ATHs concerned and they have been raised in ATH audit reports. I have recommended that LMGL discontinue the practice of engaging ATHs as agents for record keeping.

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 an audit frequency of nine months for the following reasons:

- Five non compliances relate to certification of four metering installations by one ATH, which can be resolved by having a different ATH conduct recertification.
- Three months would be too soon for LMGL to finalise and report on the statistical sampling results.

AUDIT SUMMARY

NON-COMPLIANCES

Subject	Section	Clause	Non Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Registry updates	3.2	2 of Schedule 11.4	345 registry updates later than 15 business days.	Strong	Low	1	Identified
Design reports	4.1	2 of Schedule 10.7	Design reports not obtained or recorded for 3 Category 2 metering installations	Moderate	Low	2	Identified
Metering Installation Design &	4.3	4(1) of Schedule 10.7	ATHs are not always recording the design report reference.	Moderate	Low	2	Identified

Accuracy			Delta and NPOW ATHs not calculating uncertainty in accordance with the Code				
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
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	Moderate	Low	2	Identified
Provision of Registry Information	6.2	Clause 7 (1), (2) and (3) of Schedule 11.4	Some registry records incomplete or incorrect.	Strong	Low	1	Identified
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.	Moderate	Low	2	Identified
Certification of metering installations	7.1	10.38 (a), clause 1 and clause 15 of Schedule 10.7	Certification expired for 26,267 ICPs.	Moderate	Medium	4	Identified
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	Moderate	Low	2	Identified
Alternative certification	7.9	32(2), (3) and (4) of Schedule 10.7	Invalid alternative certification applied	Weak	Low	4	Unknown
Meter certification	7.15	24(3) of Schedule 10.7	Meters not certified for four metering	Moderate	low	2	Identified

			installations				
CT certification	7.16	18 of Schedule 10.7	CTs not certified for three metering installations	Moderate	low	2	Identified
Data storage device certification	7.17	36(1) of Schedule 10.7	Data storage devices not certified for three metering installations	Moderate	low	2	Identified
Future Risk Rating						27	
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
Accurate and complete records	5.1	Clause 4(1)(a) and (b) of Schedule 10.6	Discontinue the practice of using ATHs as agents for records management.
			Require ATHs to provide certification records with better clarity.

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 contractors 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 36 ICPs to confirm their compliance and availability.

Audit commentary

Complete certification records were provided for 23 of 36 installations. Certification reports were not provided for ten metering installations and for three installations the components were not certified. This matter is discussed further in subsequent sections where I record non-compliance and recommend LMGL ceases their reliance on ATHs storing records on their behalf.

1.5. Hardware and Software

LMGL uses the registry as their database. No other systems are employed.

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	41,806
2	334
3	3
4	0
5	0
9	1

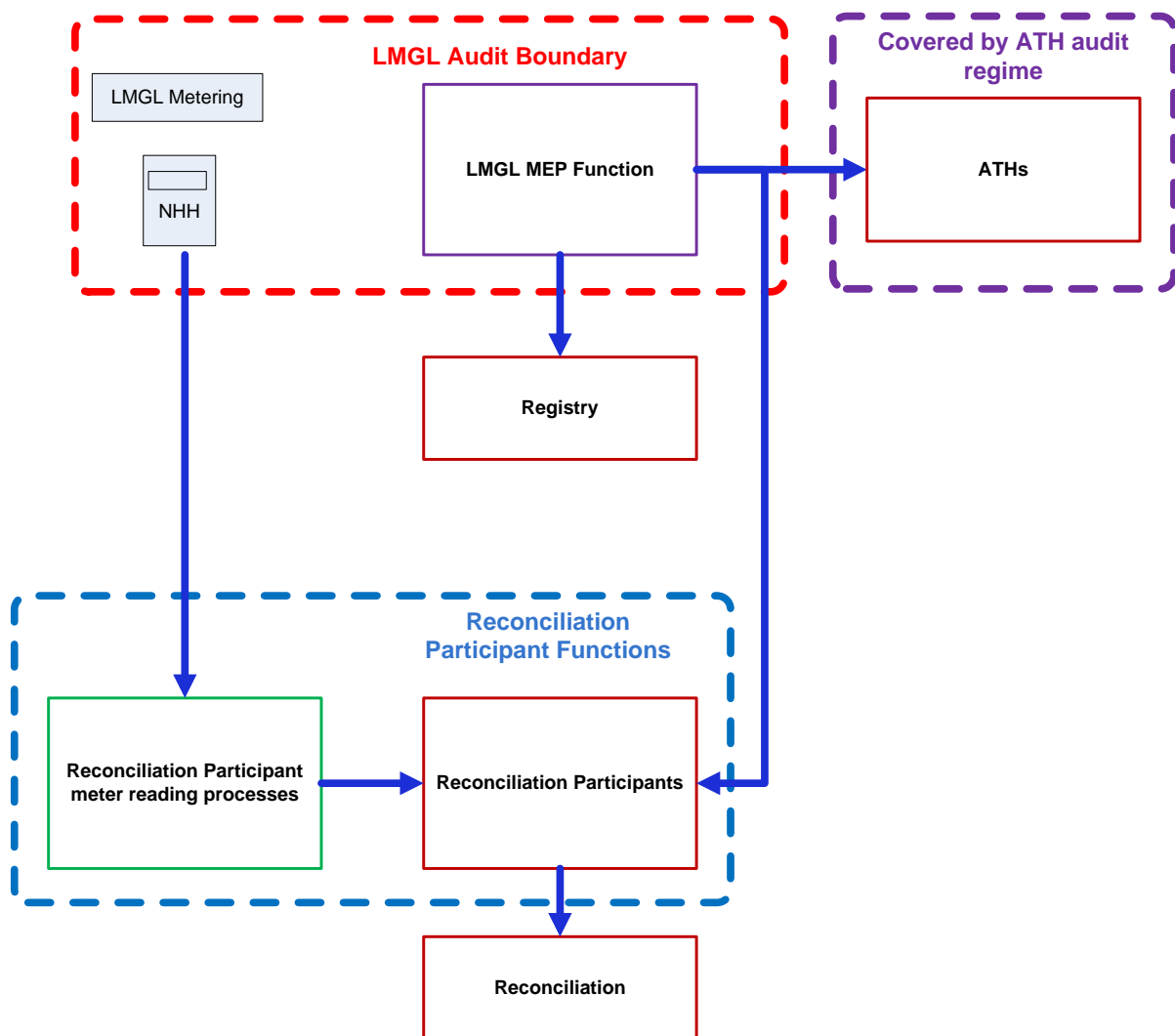
1.8. Authorisation Received

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.



1.10. Summary of previous audit

The previous audit was conducted in October 2016 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 notification	3.3	2 of schedule 11.4	Registry not notified within 15 days for 843 ICPs	Still existing
Error and uncertainty	4.3.1	4(1) of schedule 10.7	Design report not recorded for six metering installations certified by VEMS	Cleared
Cancellation of certification	4.5	20(1)(e) and (2) of schedule 10.7	ICP 0000021335CE32B was certified by statistical sampling but it has a single phase meter on a 3 phase supply and is therefore not fit for purpose	Cleared
Metering records	5.1	4(1)(b)(i), (v) & vii of schedule 10.6	Meter certification records not provided for 5 metering installations.	Still existing
Accuracy of registry information	6.1	7(1) of schedule 11.4 & 11.2(1)(a) of part 11 & 10.6(1)(a) of part 10	Some registry records incomplete or incorrect.	Still existing
Changes to registry records	6.2	3 of schedule 11.4	Some records updated on the registry later than 10 business days.	Still existing
Certification of metering installations	7.1	10.38(a) of part 10 & 15(1) of schedule 10.7	28,992 of 36,443 ICPs with expired certification. 3 ICPs certified later than 5 business days after energisation	Still existing
Certification tests	7.2	10.38(b) of part 10	Accumulation of pulses not measured for raw meter data output test by VEMS	Cleared

Subject	Section	Clause	Non compliance	Status
Faulty metering installations	9.1	10.43(5)(a)) of part 10	Investigations not conducted within 20 business days for 11 ICPs	Still existing

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 30 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. The services access interface is not always recorded in the reports provided by the Northpower ATH. This issue is highlighted in section 5.1. LMGL is compliant for maintaining the services access interface but non-compliance is recorded in Section 5.1 in relation to accurate and complete information.

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.

Audit outcome

Compliant

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 01/12/16 to 31/08/17 for all records where LMGL became the MEP to evaluate the timeliness of updates.

Audit commentary

The table below shows there were 345 late updates to the registry out of 4,928 events. Most of the late updates were due to late nomination by traders.

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

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 3.2 With: Clause 2 of Schedule 11.4 From: 01-Dec-16 To: 31-Aug-17	345 registry updates later than 15 business days. Potential impact: Medium Actual impact: Low Audit history: Twice Controls: Strong Breach risk rating: 1		
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. 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
Principally ATH or other participant caused. LMGL prides itself on quick turnaround once compliant information is received.			Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Principally ATH or other participant caused. LMGL prides itself on quick turnaround once compliant information is received.			

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.

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. Most ATHs have provided design reports for this work which I have checked.

Audit commentary

The design reports used by VEMS, Wells, IndeServe and DELTA include all relevant details required by the Code and ATHs had correctly recorded the design for all 31 metering installations checked. Three Category 2 installations certified by Northpower did not have the design report recorded and LMGL does not have a copy of their design reports. This does not achieve compliance with the requirement to obtain a design report.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.1 With: Clause 2 of Schedule 10.7 From: 13-Jun-17 To: 25-Aug-17	Design reports not obtained or recorded for 3 Category 2 metering installations Potential impact: Low Actual impact: Low Audit history: Twice Controls: Moderate Breach risk rating: 2
Audit risk rating	Rationale for audit risk rating
Low	Controls are in place and have achieved compliance in most cases. 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

Design reports must be produced and LMG has attempted with the ATH to get this type of basic information sorted. As per previous Audits as well. This is only for a small number of the total ICPs worked on. Nevertheless they (the ATHs) should be able to produce them.		Identified
Preventative actions taken to ensure no further issues will occur	Completion date	

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, IndeServe, NPOW and Wells 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 20 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. Northpower's uncertainty figure is recorded as 0.1% which appears to be incorrect because the uncertainty related to the clamps only would be higher than this. The detailed calculations were not provided.

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 34 recent certification records and found that the design report was not populated for three of the 34. Compliance is not achieved with the requirement to ensure metering installations comply with the design if the design is not recorded.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 4.3 With: Clause 4(1) of Schedule 10.7 From: 13-Jun-17 To: 25-Aug-17	ATHs are not always recording the design report reference. Delta and NPOW ATHs not calculating uncertainty in accordance with the Code Potential impact: Medium Actual impact: Low Audit history: Twice Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	I have recorded the controls as moderate because there is room to improve the records provided by ATHs and their processes. The impact is minor; therefore the audit risk rating is low		
Actions taken to resolve the issue		Completion date	Remedial action status
LMG will communicate again with the ATHs concerned about the need for design report and supporting calculation documentation and process conformity to the standards.		Immediately	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	

LMG will communicate again with the ATHs concerned about the need for design report and supporting calculation documentation and process conformity to the standards.	immediately	
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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 three metering installations above Category 2. I checked the registry fields to confirm compliance.

Audit commentary

All three 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. The other ATHs have 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 01/12/16 to 31/08/17 to evaluate the timeliness of registry updates.

Audit commentary

The table below shows that 92% of new connection updates and 97% of corrections were within 10 business days. 27 of the 42 late new connection updates were caused by late nomination by the trader. The other main issue was late field notification.

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%
Updates	2016	32,112	31,178	934	1.7	97%
	2017	18,200	17,599	601	10.5	97%

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 4.10 With: Clause 3 of Schedule 11.4 From: 01-Aug-16 To: 31-Jul-17	Some records updated on the registry later than 10 business days. Potential impact: Low Actual impact: Low Audit history: Twice 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
The late field notification ICPs is the perennial issue for the industry. LMGs ability to influence the root cause is even less than the larger MEPs who also use the same parties. We have complained of this issue before as have others. The important thing is the volume and market impact.		Immediately	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
We will bring this matter up once again with the MEPs in our discussion with them.		immediately	

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 all cases, LMGL provided a reading to the trader. Compliance is confirmed.

Audit outcome

Compliant

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

Audit commentary

I checked examples 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 36 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 36 installations to confirm they were available but only 34 were provided. Three installations certified by Northpower did not have meter certification reports. LMGL therefore does not have the information stipulated above. I recommend LMGL discontinues their practice of using ATHs to act as agents for records management.

Recommendation	Description	Audited party comment	Remedial action
Clause 4(1)(a) and (b) of Schedule 10.6	Discontinue the practice of using ATHs as agents for records management.	This would be a large change for both LMG and the ATHs. The key thing is that the records exist, they are accurate and freely available on request. I am not sure changing the location of them will improve the root cause. It will initially slow down the production of full records for us to then update the Registry and market. It may also introduce more cost that flows on down to the consumer. Even though it shouldn't. Let's all fix it at source rather than force an extra step (on both parties) to try and sort it out.	Not planned

Several of the records were difficult to read and some of the critical fields were difficult to identify. I recommend LMGL requires ATHs to include the following information clearly on the first page of certification records:

1. ICP.
2. Metering installation certification date.
3. Metering installation certification expiry date.
4. Energisation date (if known and if the ATH is also the energisation agent).
5. Metering Category.
6. Certification type (selected component, comparative, fully calibrated, alternative, low load, lower category).

Recommendation	Description	Audited party comment	Remedial action
Clause 4(1)(a) and (b) of Schedule 10.6	Require ATHs to provide certification records with better clarity.	A long standing market issue. LMG has tried and been unsuccessful to influence the correct production of information. We scratch our heads how some ATHs pass their audits when we don't as a result of their non compliance in records production and timely furnishing.	Identified

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 5.1 With: Clause 4(1)(a) and (b) of Schedule 10.6, and Table 1, Schedule 11.4 From: 01-Dec-16 To: 31-Aug-17	Certification records not provided for two metering installations Meter certification records not provided for 3 metering installations. Potential impact: Low Actual impact: Low Audit history: Twice Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	I have recorded the controls as moderate in this area because there is a heavy reliance on ATH practices and there is room to improve monitoring of compliance Without complete and accurate records there is a minor risk that incorrect certification could occur, therefore the audit risk rating is recorded as low.		
Actions taken to resolve the issue		Completion date	Remedial action status
Note the comment above		Further attempts will be made but we have obviously been unsuccessful correcting the root cause.	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	

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 01/12/16 to 31/08/17 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 traders 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 80 metering installations where LMGL had conducted inspections during 2016. The only data related issues were where the on-site certification date for nine installations was unreadable because the sticker was faded, unreadable or missing and one ICP had an incorrect register content code and period of availability.

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

Quantity of ICPs			Issue	Resolved?
October 2017	Dec 2016	May 2016		
0	82	1	Blank metering records on the registry. These are all MEP switches in progress; therefore, it is only a timing issue present, not a discrepancy.	Yes
0	0	5	Category 2 on the registry but with interim certification.	Yes
11	0	30	Incorrect certification duration.	Yes
9	8	1	Embedded generation installation without an injection register. The retailer has been contacted in relation to all of these to check whether a meter change is required.	In progress
2	2	4	Category 2 installations without CTs recorded on the registry.	Yes
2,067	53	233	ICPs with controlled load and no load control device recorded on the registry.	In progress
1,318	3	175	IN register content code but no control device on the registry.	In progress
9	16	101	ICPs with a register content code of CN only and a residential ANZSIC code	Yes
2	2	6	Day without night.	Yes
20	16	41	Night without day.	In progress
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
259	311	1	Compensation factor of 3 None were certified after August 2013	In progress
0	0	1	HHR submission, Install is NHH	Yes
57	37	17	IN24	Yes
1	2	0	UN not 24	Yes
3	3	0	Incorrect certification dates	Yes
48	3,311	0	Incorrect maximum interrogation cycle of zero	Yes
840	-	-	Certification and expiry dates 01/04/00	In progress
3	-	-	Incorrect ATH recorded	Yes
148	-	-	UN only with load control device	In progress

There are nine ICPs with embedded generation recorded by the distributor where the retailer's profile does not indicate generation is installed and the metering is not import/export capable. These were investigated with the following findings:

- The retailer is investigating whether solar is installed for six of the nine ICPs
- The retailer has not approved the solar installation at one ICP and has requested the customer to switch away
- Solar panels are installed but disconnected at one ICP until appropriate metering is installed
- Solar was connected at one ICP without the retailer's approval and without import/export metering. Metering cannot be installed due to an asbestos meter panel and unsafe wiring.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 6.2 With: Clause 7 (1), (2) and (3) of Schedule 11.4 From: 01-Dec-16 To: 31-Aug-17	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
Any non compliance here by LMG is heavily influenced by those upstream of them. LMG always updates as soon as other parties perform their duties to aid the process.			Identified
Preventative actions taken to ensure no further issues will occur		Completion 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. They don't have a separate system to validate the registry against.

Audit commentary

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

Audit outcome

Not applicable

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 five.

ICP 0001501996ENBOC 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 needs to be 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.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.4 With: Clause 20 of Schedule 10.7 From: 30-Jun-17 To: 18-Oct-17	Certification cancelled for one ICP and the registry was not updated within 10 business days. Potential impact: Medium Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2
Audit risk rating	Rationale for audit risk rating
Low	I have recorded the controls as moderate because most issues are identified. Additional controls may be required to identify installations certified as a lower category. Metering category 2 has a greater accuracy tolerance than Category 3, so impact on settlement could be minor. The audit risk rating is low.
Actions taken to resolve the issue	
Completion date	Remedial action status

On inheriting this old issue for the market LMG immediately performed investigations with the network, site customer and retailer. The chosen option by the retailer is a remotely read meter so that the customer does not pay for site alterations or move to a more expensive TOU retail electricity plan. This means that the Retailer will be appointing their preferred smart meter provider as the MEP forthwith. Something that should have happened under the previous Retailer and MEP a long time ago. LMG has in effect resolved the issue in the short time they have had it.	Solved – reliant on the new MEP being nominated and installing their smart meter.	Identified This is recorded as identified until the trader nominates the new MEP and the registry is updated
Preventative actions taken to ensure no further issues will occur	Completion date	
LMG does not deal in Cat3 sites that do not have remote communicating meters on them. This one was an anomaly from an old issue being tracked by the auditor. We only inherited the site without being informed of the issue.		

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 26,367 ICPs have expired certification. The table below gives a breakdown of these.

Quantity	Details
21,943	Previously interim certified Category 1
3,305	Expired statistical certification
259	Expired full certification Category 1
20	Expired full certification Category 2
840	Cert date and cert expiry dates of 01/04/00

LMGL is conducting statistical sampling for their Category 1 metering installations. The process has them all in the same population.

Certification had expired for 20 Category 2 metering installations at the time the analysis was conducted. The status of the 20 is as follows:

- Certification jobs have been issued for 11 installations
- 2 jobs are complete
- 4 have switched to alternative MEPs
- 1 has yet to have a job issued
- 2 are awaiting approval from the retailer

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-Dec-16 To: 18-Oct-17	Certification expired for 26,267 ICPs. Potential impact: High Actual impact: Medium Audit history: Multiple times Controls: Moderate Breach risk rating: 4		
Audit risk rating	Rationale for audit risk rating		
Medium	I have recorded the controls as moderate 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 impact on settlement is recorded as moderate because of the increased likelihood of failure or inaccuracy for metering installations with expired certification, therefore the audit risk rating is medium.		
Actions taken to resolve the issue		Completion date	Remedial action status
Certification progress and attention to this task is rapid in comparison to the history of the sites with others in the preceding decades. The Compliance Programme is at an advanced stage. Time frame continues to be subject to ATH resource availability and prioritisation of this work in comparison to the demands of their larger MEP clients. LMG has also been striking a very large % of UTIs. In excess of 65%. This has also added greatly to both the time and cost aspects of delivery.			Identified
Preventative actions taken to ensure no further issues will occur		Completion date	

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 34 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 0001501996ENBOC 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 needs to be 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.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 7.6 With: Clauses 6(1)(b) and (d), and 6(2)(b) of Schedule 10.7 From: 30-Jun-17 To: 18-Oct-17	Monitoring not conducted for one installation certified as a lower category Potential impact: Medium Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2
Audit risk rating	Rationale for audit risk rating
Low	I have recorded the controls as moderate because additional controls may be required to identify installations certified as a lower category. Metering category 2 has a greater accuracy tolerance than Category 3, so impact on settlement could be minor. The audit risk rating is low.
Actions taken to resolve the issue	
Completion date	Remedial action status

On inheriting this old issue for the market LMG immediately performed investigations with the network, site customer and retailer. The chosen option by the retailer is a remotely read meter so that the customer does not pay for site alterations or move to a more expensive TOU retail electricity plan. This means that the Retailer will be appointing their preferred smart meter provider as the MEP forthwith. Something that should have happened under the previous Retailer and MEP a long time ago. LMG has in effect resolved the issue in the short time they have had it.		Identified
Preventative actions taken to ensure no further issues will occur	Completion date	

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

There are no examples of insufficient load certifications.

Audit outcome

Not applicable

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 1 business day:*

- *the MEP must follow the procedure for handling faulty metering installations (clause 10.43 - 10.48).*

Audit observation

There are no examples of insufficient load certifications.

Audit commentary

There are no examples of insufficient load certifications.

Audit outcome

Not applicable

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. 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: 20-Jun-17	Invalid alternative certification applied Potential impact: Medium Actual impact: Low Audit history: None Controls: Weak Breach risk rating: 4		
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
0006593950RN692 has extenuating circumstances that have already been commented on in the audit document that warranted the alternate certification.			Unknown The non-compliance relates to ICPs:
Preventative actions taken to ensure no further issues will occur		Completion date	0000100223UN118 0103992006LCF3F
			It is accepted that the alternative certification is valid for 0006593950RN692

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:

- has a time keeping error of not greater than an average of two seconds per day over a period of 12 months*
- 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 five 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

Not applicable

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 20 Category 2 metering installations to confirm that compensation factors were correctly recorded on the registry.

Audit commentary

The compensation factors were correct for all 20 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 34 metering installations to confirm compliance.

Audit commentary

Meters were not certified for four metering installations certified by Northpower.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 7.15 With: Clause 24(3) of Schedule 10.7 From: 31-Jan-17 To: 25-Aug-17	Meters not certified for four metering installations Potential impact: Medium Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	I have recorded the controls as moderate because improvements are required to ensure all meters are certified. Without certification there is a minor risk of non-compliant metering being installed. The audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
Northpower more than most has a compliant documentation issue. This is the first period in which LMG has been exposed to a known issue with Northpower. They were a subcontracted agent to the main ATH we issued the work to... that being Delta. Even before we were audited we wrote to them pointing out the documentation and deficiencies. A lab certified meter was of course provided to all sites, it is just the field test House certification process of the meter and its install we are talking about here.			Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
LMG will write again but we are aware this is a known and ongoing industry issue affecting all MEPs for this ATH. Our ability to therefore influence may not be as great as we would like to think.			

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 20 metering installations to confirm compliance.

Audit commentary

Measuring transformer certification records were not provided for three Category 2 metering installations. It is not possible to determine whether the certification applied is comparative or selected component so I've assumed the measuring transformers should have been certified.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 7.16 With: Clause 28(1) of Schedule 10.7 From: 31-Jan-17 To: 25-Aug-17	CTs not certified for three metering installations Potential impact: Medium Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	I have recorded the controls as moderate because improvements are required to ensure all components are certified. Without certification there is a minor risk of non-compliant components being installed. The audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
Refer previous comments re the ATHs in question and their need to prove they have made the devices and sites compliant.			Identified
Preventative actions taken to ensure no further issues will occur		Completion date	

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 34 metering installations to confirm compliance.

Audit commentary

Data storage devices were not certified for three metering installations.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 7.17 With: Clause 36(1) of Schedule 10.7 From: 31-Jan-17 To: 25-Aug-17	Data storage devices not certified for three metering installations Potential impact: Medium Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	I have recorded the controls as moderate because improvements are required to ensure all components are certified. Without certification there is a minor risk of non-compliant components being installed. The audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
Refer the comments re the ATH non certification of the data storage device at install. The devices were of course lab certified prior to install. This is about the field certification at install by the field ATH.			Identified
Preventative actions taken to ensure no further issues will occur		Completion date	

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 13 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 13 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 (Clause 10.46(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 13 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 13 non-compliances and two recommendations are made.

LMGL has made sound progress with regard to registry discrepancies. Most of the outstanding issues relate to load control device information and register content codes and period of availability. There are 259 three phase metering installations where only one phase is metered. Three phase meters will need to be installed to achieve compliance.

There are 26,267 ICPs where the metering installation certification has expired. 279 of these previously had full certification and 20 of the 279 are Category 2. LMGL is conducting statistical sampling of their entire Category 1 population.

One ICP was certified as a lower category but monitoring was not conducted, leading to the certification being cancelled. Certification was cancelled for the previous MEP for the same reason.

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.

Six non compliances relate to Approved Test House (ATH) practices or record keeping. These issues have been present for at least four years for the ATHs concerned and they have been raised in ATH audit reports.

PARTICIPANT RESPONSE

We continue to make good progress post the acquisition of non compliant metering installations. There has been additional small allotments of new non compliant metering installations since the main purchases as the parties concerned continue to find the 'rats and mice' that were not part of the bulk acquisitions. The Gisborne Girls High School ICP (mentioned a few times in this audit re the non monitoring of a Cat3 ICP is one example) that when discovered as to the issue [which originally arrived in May17 with an ATH ICP certificate document showing full certification btw) LMG stepped in to resolve the issue quickly. This was performed by doing deep technical investigations on the site and all associated equipment, both present and absent, and also via communicating with both the network company, the Retailer, the site customer and their electrical contractors to weigh up options. Ultimately the Retailer is now going to get their preferred smart meter provider to install a smart meter. This is the most cost effective option for them and their customer.

Data quality and ATH conformance continues to be an issue for those supplying information to LMG. LMG showed the auditor communications to those parties who are the root cause of the majority of non conformances in this audit, asking that they provide compliant documentation or information or submit it on time.

LMG does wonder how our non compliance and its impact on market perception and LMGs own audit timetable is fair when really the root causes lie elsewhere and have been known for some time. Also, these same parties get a longer audit period and continuation of both their ability to trade on with the same practices that create LMGs consequential non conformances.

LMG is bringing real benefits to the market in general and in particular with their new services and products.

The reader will note that 'Dates of Completion' have not been entered as on the whole the issues lie with other parties outside of any real control by LMG to bring 100% adherence for all ICPs in question. To enter a date so seems irrelevant when attempts both by LMG and the larger MEPs to rectify the real root causes have (obviously) been fruitless. Entering a date seems academic at best. Non conformance is

of course in respect to the 'exceptions' of ICPs and not the **far** greater percentage which meet the requirements. The reader needs to bear this in mind.