ELECTRICITY INDUSTRY PARTICIPATION CODE
METERING EQUIPMENT PROVIDER AUDIT REPORT

VERITEK

For

INTELLIHUB LIMITED
NZBN:9429047189027

Prepared by: Brett Piskulic – Veritek Limited

Date audit commenced: 14 March 2023

Date audit report completed: 12 May 2023

Audit report due date: 12-May-23

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EXECUTIVE SUMMARY

Intellihub Limited (Intellihub) is a Metering Equipment Provider (MEP) and is required to undergo an audit by 12th May 2023 in accordance with clause 16A.14.

This is the first audit of Intellihub encompassing all ICPs under the MTRX, BOPE and IHUB MEP identifiers. All ICPs with the IHUB identifier were transferred to Intellihub Limited on 1st May 2022. Intellihub also took over responsibility for a number of ICPs with expired or cancelled certification during the audit period. Planning is underway to recertify these ICPs.

Sixteen non-compliances were identified.

Intellihub has regularly met with the ATHs to work on improving the quality of information recorded in certification reports. The number of errors found in certification reports from ATHs has decreased significantly since the last audit.

The other main areas of non-compliance related to following issues:

- late updating of registry information,
- inaccurate registry information,
- discrepancy reporting not run since 1st October 2021 for BOPE ICPs,
- expired and cancelled certification,
- time was not monitored every 12 months for 137 ICPs with time dependent registers,
- incorrect compensation factor recorded for two ICPs,
- meters not reinstated after bridging within five business days of bridging for 10 Category 1 ICPs, and
- missed inspection for two metering installations.

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. After considering Intellihub's responses to the areas of non-compliance I recommend an audit frequency of 12 months.

AUDIT SUMMARY

NON-COMPLIANCES

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Provision of accurate information	2.5	11.2 and 10.6	All practicable steps were not taken to ensure data is correct and that incorrect data was corrected as soon as practicable.	Moderate	Low	2	Investigating
Registry updates	3.2	2 of Schedule 11.4	2,186 registry updates later than 15 business days.	Moderate	Low	2	Investigating
Changes to registry records	4.10	3 of Schedule 11.4	Some records updated on the registry later than 10 business days.	Moderate	Low	2	Investigating
Accurate and complete records	5.1	4(1)(a) and (b) of Schedule 10.6	Some inaccurate or incomplete certification records.	Moderate	Low	2	Investigating
Provision of registry information	6.2	7 (1), (2) and (3) of Schedule 11.4	Some registry records incomplete or incorrect.	Moderate	Low	2	Investigating
Error correction	6.3	6 of Schedule 11.4	MTRX and IHUB - Discrepancies not resolved within five business days. BOPE – Discrepancy report not run since 1st October 2021.	Moderate	Low	2	Identified
Certification cancellation	6.4	20 of Schedule 10.7	Certification not cancelled on the registry within 10 business days for: • Certification not cancelled on the registry within 10 business days for: • one Category 2 ICP with missed inspection, • ten meters (of a sample of 30)	Moderate	Low	2	Investigating

			where sum-check failure was not resolved within three business days, and • five bridged Category 1 meters.				
Certification of metering installations	7.1	10.38 (a), clause 1 and clause 15 of Schedule 10.7	Certification expired, cancelled or late for 14,371 ICPs.	Strong	Medium	2	Investigating
Certification Tests	7.2	10.38(b)	All test results not recorded in 17 certification records. Prevailing load test not conducted for five Category 1 metering installations.	Moderate	Low	2	Investigating
Timekeeping	7.10	23 of Schedule 10.7	102 meters with time dependent meter registers where time was not monitored every 12 months.	Moderate	Low	2	Investigating
Compensation factors	7.14	24(3) of Schedule 10.7	Compensation factors were incorrectly recorded on the registry for two BOPE ICPs.	Moderate	Low	2	Investigating
Category 2 to 5 Inspections	8.2	46(1) of Schedule 10.7	Two Category 2 metering installations not inspected within the maximum inspection period.	Strong	Low	1	Cleared
Investigation of Faulty Metering Installations	9.1	Clause 10.43(4) and (5)	Report on defective Category 2 metering installation not provided to affected participant within 10 business days.	Moderate	Low	2	Cleared
Meter bridging	9.5	10.33C	Meters not reinstated after bridging within five business days of bridging for 10 Category 1 ICPs.	Moderate	Low	2	Cleared
Time errors	10.7	8(4) of Schedule 10.6	49 examples of clock errors outside the allowable thresholds in	Strong	Low	1	Identified

			the most recent daily reporting.				
Raw meter data and compensation factors	10.11	8(10) of Schedule 10.6	Compensation factor applied to raw meter data for 20 BOPE ICPs.	Strong	Low	1	Identified
						Future Risk Rating	**29**
						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	Remedial action
Accurate and complete records	5.1	Require Wells to change the layout of the certification report to include the more relevant items clearly on the front page.	Investigating
Timekeeping Requirements	7.10	Develop a process to identify meters which become subject to the timekeeping Requirements of Clause 23 of Schedule 10.7 and ensure the time is monitored and corrected as required.	Investigating

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 for any exemptions in place.

Audit commentary

I checked the Electricity Authority website and I confirm there are two exemptions in place.

Exemption 305 regarding the sum-check process for four meter types. The exemption came into force on 3rd May 2021 and expires on 31st May 2023.

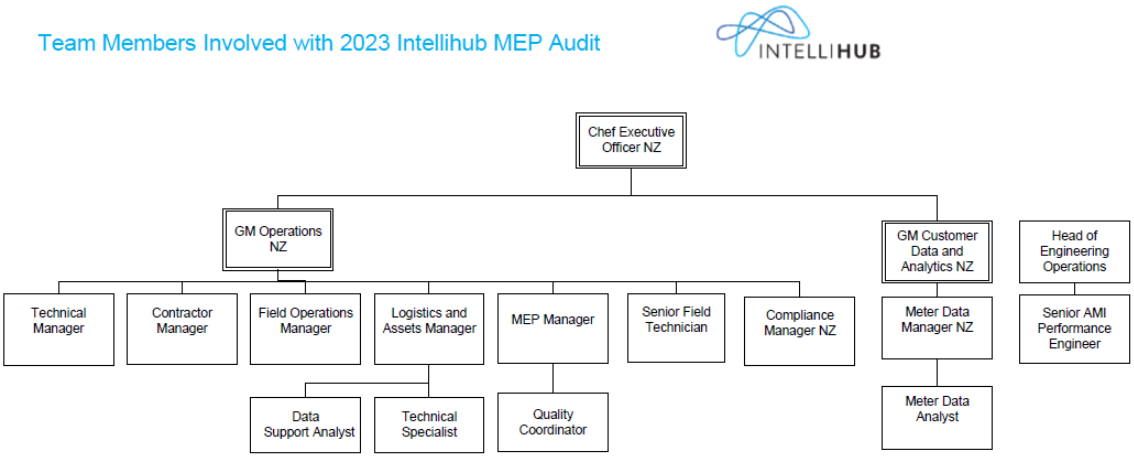
Intellihub NZ Limited ("Intellihub") is exempted from the complying with the obligation in clause 8(9) in Schedule 10.6 of the Electricity Industry Participation Code 2010 to ensure that each electronic interrogation of the metering installation that retrieves half hour raw meter data compares the sum of that data against the increment of the metering installation's accumulating meter registers for the same period.

Intellihub advised that the exemption will not be required after 31st May 2023; this is discussed further in **section 10.9**.

Exemption 276 Nova Energy Limited ("Nova") is exempted from complying with the obligation in clause 7(1) of Schedule 11.4 of the Electricity Industry Participation Code 2010 ("Code") to provide to the registry manager the information indicated in line 30 of Table 1 in Schedule 11.4 of the Code. This exemption allows Nova to record the settlement indicator for unused EG data channels as "N" for devices with an AMI flag of "Y". This exemption expires on 30th April 21, 2023. Intellihub advised that the exemption is no longer required.

1.2. Structure of Organisation

Intellihub provided the organisation charts below showing the team members involved in the audit.



1.3. Persons involved in this audit

Auditor: Brett Piskulic

Veritek Limited

Electricity Authority Approved Auditor

Intellihub personnel assisting in this audit were.

Name	Title
David Boyle	GM Operations Manager NZ
Niu Nelson	MEP Manager
Teuila Laika	Quality Coordinator
Chris Chambers	Quality & Compliance Officer
Paul Thornton	Technical Manager
Paul Wilson	Contractor Manager
Jamie Harrison	Meter Data Analyst
Gus Wolfgramm	Asset Engineer
George Diederen	Technical Specialist
Shane Broome	Logistics and Assets Manager
Andrew Doel	Senior Field Technician
Daniel Pinny	GM Customer Data & Analytics NZ
Lawrence Sam	Data Support Analyst

1.4. Use of Agents (Clause 10.3)

Code reference

Clause 10.3

Code related audit information

A participant who uses a contractor

- *remains responsible for the contractor's fulfillment of the participants Code obligations*
- *cannot assert that it is not responsible or liable for the obligation due to the action of a contractor, and*

- *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

MTRX

Intellihub engages with ATHs to conduct certification activities, and Intellihub is an ATH. As an MEP, they have copies of all relevant records for installations above Category 1. They have copies of records attached to IWS for recent ICPs, but they rely on ATHs to manage and store Category 1 certification records for most ICPs. I requested certification reports for 86 MTRX ICPs to confirm their compliance and availability.

BOPE

Intellihub engages with ATHs to conduct certification activities, and Intellihub is an ATH. As an MEP, they have copies of all relevant records for installations above Category 1. They have copies of records attached to IWS for recent ICPs, but they rely on ATHs to manage and store Category 1 certification records for most ICPs. I requested certification reports for 19 BOPE ICPs to confirm their compliance and availability.

IHUB

Intellihub engages with ATHs to conduct certification activities, and Intellihub is an ATH. As an MEP, they have copies of all relevant records for installations above Category 1. They have copies of records attached to IWS for recent ICPs, but they rely on ATHs to manage and store Category 1 certification records for most ICPs. I requested certification reports for 50 IHUB ICPs to confirm their compliance and availability.

Audit commentary

MTRX

All certification records were provided, which achieves compliance with this clause.

BOPE

All certification records were provided, which achieves compliance with this clause.

IHUB

All certification records were provided, which achieves compliance with this clause.

The provision and accuracy of records is discussed further in **section 5.1**.

1.5. Hardware and Software

MTRX

MTRX MEP data is held in IWS, which is subject to backup arrangements in accordance with standard industry protocols.

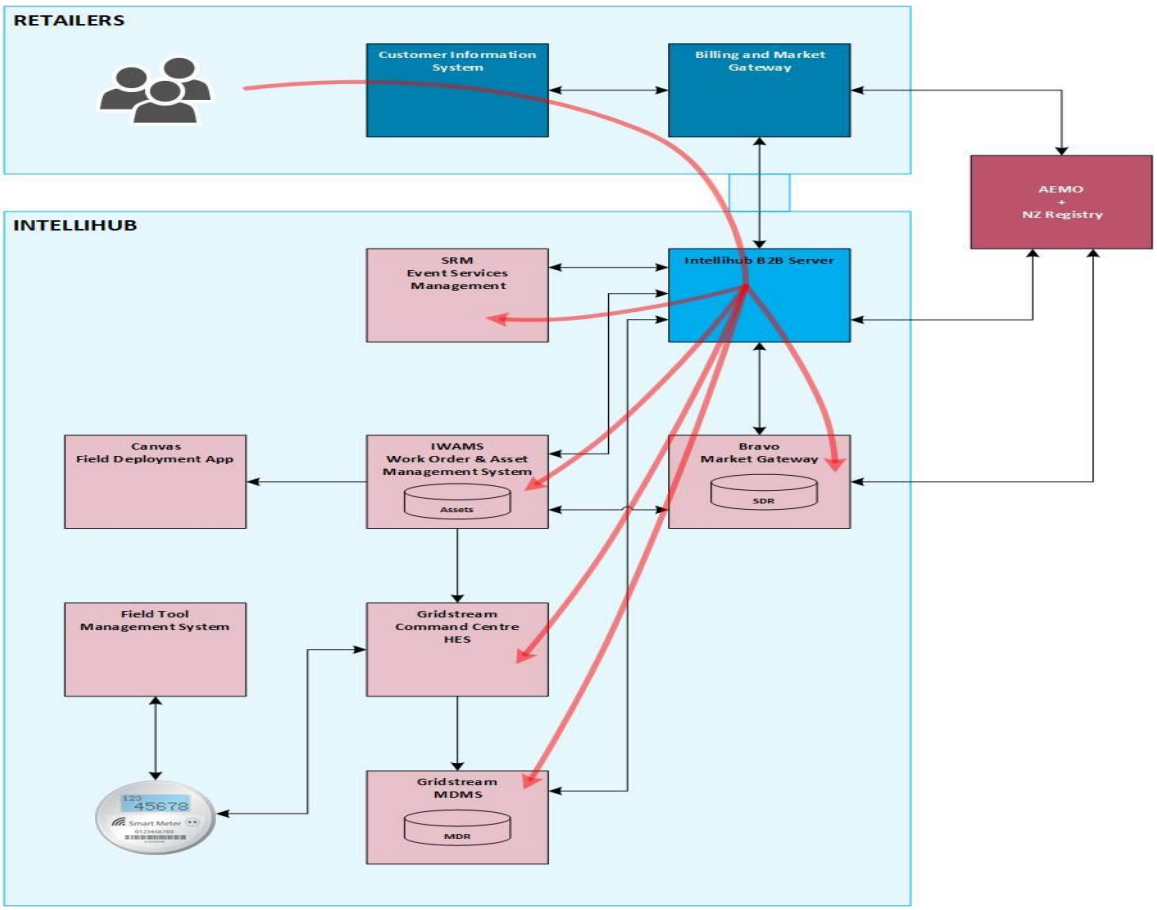
AMI data collection occurs using four different head ends and the data is stored and managed in a Meter Data Management System (MDM), which is described further in **section 10**. These systems are also subject to backup arrangements in accordance with standard industry protocols.

BOPE

BOPE MEP data was held in a metering database (CMMS) prior to the acquisition by Intellihub. CMMS was subject to backup arrangements in accordance with standard industry protocols. Intellihub has transferred all BOPE metering asset information to IWS, and metering certification records and process documents are stored in Intellihub folders.

IHUB

The relevant systems are shown in the diagram below.



Intellihub provided a "Data Backup and Retention" work instruction, which is reviewed annually. The document contains the following summary of backup arrangements:

On each Database VM (SQL and Oracle) backups are saved to a separate locally attached disk. Copies of the Database Backup files are then replicated to an Azure Cloud Storage account every hour. This Storage account is Geo-Replicated and has four copies.

The current Backup schedule is as follows:

a. full database monthly backup (kept for 13 months, then a yearly copy taken),

b. full database weekly backup (kept for five weeks),

c. incremental backup is taken on a daily basis (kept for eight days), and

d. hourly Database log backup (kept for two days).

To verify the validity of the backup processes a sample of VM and DB backups are to 'test restored' at least quarterly.

1.6. Breaches or Breach Allegations

Intellihub provided details of a self-breach and the associated closure letter from the Electricity Authority dated 2nd March 2023. The breach related to 20 ICPs under the BOPE MEP identifier where

Intellihub became aware that an external compensation factor was being applied to the raw meter data file prior to delivery to the retailer. The Authority noted the breach caused a slight market impact with customers likely being under billed by the concerned retailer. It was agreed that the Intellihub ATH would visit each ICP to verify the compensation factor. The meter will be either reprogrammed or replaced to ensure the compensation factor is applied at the meter. The Authority requires Intellihub to provide monthly updates on its progress, at the time of the audit seven meters had been replaced and jobs were issued for the remainder. Non-compliance is recorded in **section 10.11**.

1.7. ICP Data

MTRX		
Metering Category	**Number of Active ICPs Feb 2022**	**Number of Active ICPs Mar 2023**
1	412,591	428,248
2	3,111	3,535
3	14	16
4	2	1
5	0	0
9	1	4
BOPE		
Metering Category	**Number of Active ICPs Feb 2022**	**Number of active ICPs Mar 2023**
1	19,418	18,393
2	298	302
3	22	22
4	0	0
5	0	0
9	2	1
IHUB		
Metering Category	**Number of Active ICPs Apr 2022**	**Number of active ICPs Mar 2023**
1	115,233	141,964
2	61	164
3	0	0
4	0	0
5	0	0
9	4	1

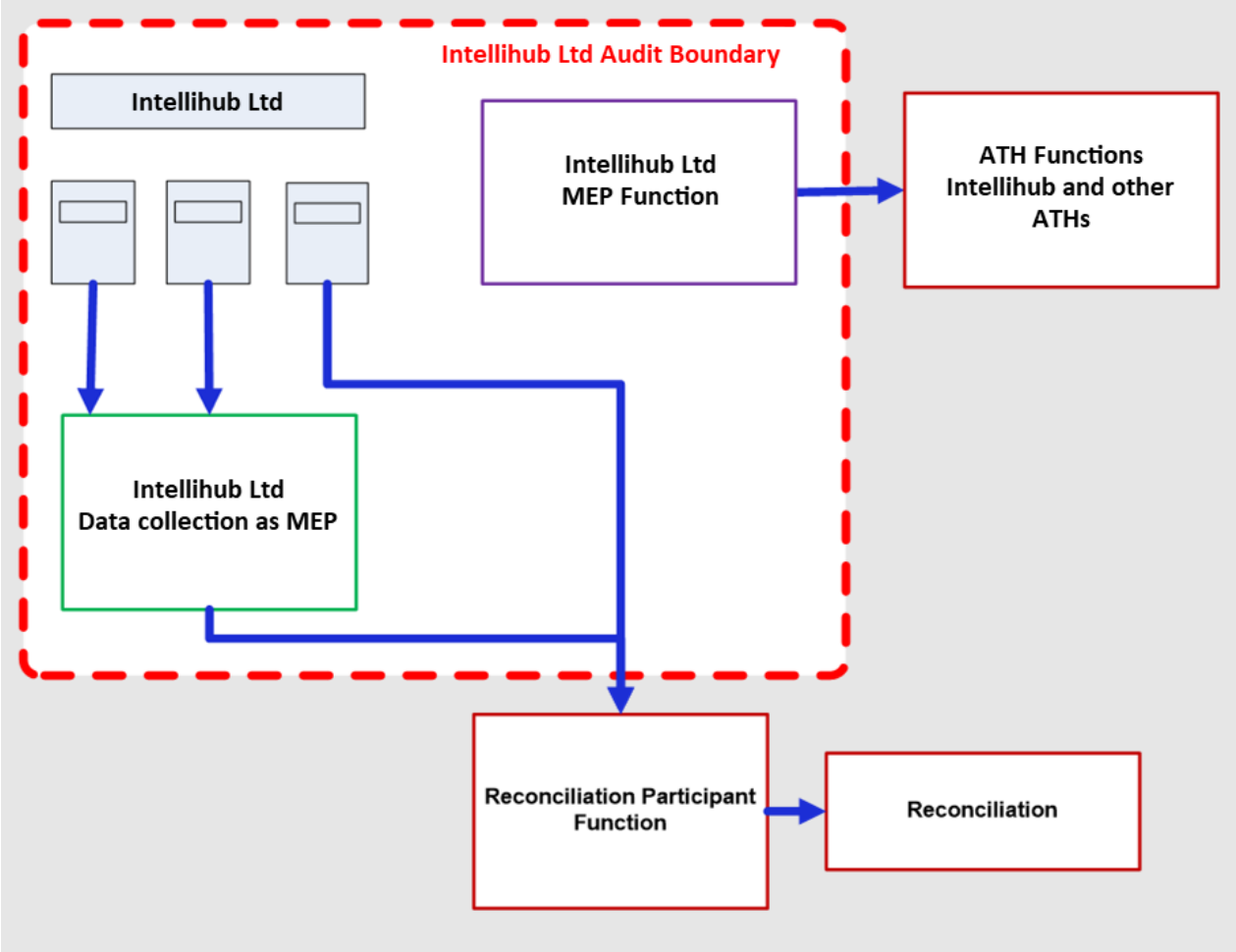
1.8. Authorisation Received

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 V2.2, 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 audits were conducted in May 2022 for the MTRX and BOPE MEP identifiers, and June 2022 for the IHUB MEP identifier, by Brett Piskulic of Veritek Limited. The table below shows the current status of the non-compliances identified.

TABLE OF NON-COMPLIANCE

Subject	Section	Clause	Non-Compliance	Status
Material change audit	1.11	16A.11	Material change audit not completed within five business days of change.	Cleared
Services access interface	2.1	10.9(2)	MTRX - Each services access interface not identified for 16 metering installations. BOPE - Each services access interface not identified for 29 metering installations.	Cleared
Provision of accurate information	2.5	11.2 and 10.6	All practicable steps not taken to ensure data is correct and that incorrect data is corrected as soon as practicable.	Still existing
Registry updates	3.2	2 of Schedule 11.4	MTRX and BOPE - 355 registry updates later than 15 business days. IHUB - 435 registry updates late.	Still existing
Changes to registry records	4.10	3 of Schedule 11.4	Some records updated on the registry later than 10 business days.	Still existing
Accurate and complete records	5.1	4(1)(a) and (b) of Schedule 10.6	MTRX and BOPE - A high number of fields not accurate and complete in a sample of 130 Certification records. IHUB - Some fields not accurate and complete in a sample of 49 certification records.	Still existing
Provision of registry information	6.2	7 (1), (2) and (3) of Schedule 11.4	Some registry records incomplete or incorrect.	Still existing
Error correction	6.3	6 of Schedule 11.4	MTRX - Discrepancies not always resolved within five business days. BOPE – Discrepancy report not run since 1st October 2021. IHUB - Discrepancies not always resolved within five business days	Still existing
Certification cancellation	6.4	20 of Schedule 10.7	MTRX - Certification not cancelled on the registry within 10 business days for: - six metering installations where low burden is present, and one Category 3 ICP with missed inspection. IHUB - Certification cancelled and registry not updated within 10 business days for 336 ICPs with failed sum-checks.	Still existing

Certification of metering installations	7.1	10.38 (a), clause 1 and clause 15 of Schedule 10.7	MTRX and BOPE - Certification expired or cancelled for 4,798 ICPs. IHUB - 869 ICPs with cancelled certification.	Still existing
Certification Tests	7.2	10.38(b)	MTRX and BOPE - Prevailing load test not conducted for eight Category 1 and one Category 2 metering installations. IHUB - All required tests not conducted for five category 1 metering installations.	Still existing
Timekeeping	7.10	23 of Schedule 10.7	One ICP with time dependent meter registers with time was not monitored every 12 months.	Still existing
Compensation factors	7.14	24(3) of Schedule 10.7	Compensation factor incorrectly recorded as "1" on the registry for ICP 0001930005TG97E.	Still existing
Category 2 to 5 Inspections	8.2	46(1) of Schedule 10.7	One Category 2 and one Category 3 metering installation not inspected within the maximum inspection period.	Still existing
Time errors	10.7	8(4) of Schedule 10.6	MTRX and BOPE - 15 examples of clock errors outside the allowable thresholds in the most recent daily reporting. IHUB - 43 examples of clock errors outside the allowable thresholds in the most recent reports. Incorrect threshold applied for reporting time errors of Category 2 meters.	Still existing

TABLE OF RECOMMENDATIONS

Subject	Section	Description	Status
Temporary Electrical Connection	4.17	Update the temporary electrical connection process to include an authorisation step by the trader and network owner.	Cleared
Accurate and complete records	5.1	Check metering installation certification reports to ensure compliance and improve controls to ensure certification records are complete and accurate.	Cleared
Accurate and complete records	5.1	Require Wells to change the layout of the certification report to include the more relevant items clearly on the front page.	Still existing
Certification Tests	7.2	Require ATHs to include details and results of all testing completed in the metering installation certification reports provided.	Cleared
Timekeeping Requirements	7.10	Develop a process to identify meters which become subject to the timekeeping Requirements of Clause 23 of Schedule 10.7 and ensure the time is monitored and corrected as required.	Still existing

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

MTRX

I checked certification records for 86 metering installations, covering all relevant ATHs.

BOPE

I checked certification records for 19 metering installations, covering all relevant ATHs.

IHUB

I checked certification records for 50 metering installations, covering all relevant ATHs.

Audit commentary

MTRX

The Code places responsibility for maintaining the services access interface on the MEP and places responsibility for determining and recording it with ATHs. The code was changed from 1st February 2021 to require the ATH to record each services access interface and the conditions under which each services access interface may be used.

I checked 86 certification records and found that each services access interface was recorded correctly by the ATHs for all 86 of the certifications.

BOPE

The Code places responsibility for maintaining the services access interface on the MEP and places responsibility for determining and recording it with ATHs. The code was changed from 1st February 2021 to require the ATH to record each services access interface and the conditions under which each services access interface may be used.

I checked 19 certification records and found that each services access interface was recorded correctly by the ATHs for all 19 of the certifications.

IHUB

The Code places responsibility for maintaining the services access interface on the MEP and places responsibility for determining and recording it with ATHs. The code was changed from 1st February 2021 to require the ATH to record each services access interface and the conditions under which each services access interface may be used.

I checked 50 certification records and found that each services access interface was recorded correctly by the ATHs for all 50 of the certifications.

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 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

MTRX

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

BOPE

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

IHUB

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

Audit commentary

MTRX

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

BOPE

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

IHUB

IHUB 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

MTRX

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

BOPE

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

IHUB

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

Audit commentary

MTRX

MTRX uses the MTRX identifier in all cases.

BOPE

BOPE uses the BOPE identifier in all cases.

IHUB

IHUB uses the IHUB 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

MTRX

MTRX is the MEP for AMI metering installations where communication equipment is present. I checked that the ATHs have processes in place to check the relevant type test certificates to ensure compliance with this clause.

BOPE

BOPE is the MEP for AMI metering installations where communication equipment is present. I checked that the ATHs have processes in place to check the relevant type test certificates to ensure compliance with this clause.

IHUB

IHUB is the MEP for AMI metering installations where communication equipment is present. I checked that the ATHs have processes in place to check the relevant type test certificates to ensure compliance with this clause.

Audit commentary

MTRX

MTRX ensures all communication equipment is appropriately certified with the relevant telecommunications standards. This is recorded in type test certificates and other approval documents. A type test schedule is maintained, which contains a list of all components used and the type test report reference.

BOPE

BOPE ensures all communication equipment is appropriately certified with the relevant telecommunications standards. This is recorded in type test certificates and other approval documents. A type test schedule is maintained, which contains a list of all components used and the type test report reference.

IHUB

IHUB ensures all communication equipment is appropriately certified with the relevant telecommunications standards. This is recorded in type test certificates and other approval documents. A type test schedule is maintained, which contains a list of all components used and the type test report reference.

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

MTRX

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

BOPE

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

IHUB

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

Audit commentary

MTRX

As recorded in **sections 5** and **6** there are some registry and certification records which are not complete and accurate. MTRX is attempting to correct information as soon as practicable. There are some metering installations with cancelled certification and the registry has not been updated as soon as practicable.

BOPE

As recorded in **sections 5** and **6** there are some registry and certification records which are not complete and accurate. BOPE is attempting to correct information as soon as practicable.

IHUB

As recorded in **sections 5** and **6** there are some registry and certification records which are not complete and accurate. Intellihub is attempting to correct information as soon as practicable. There are some metering installations with cancelled certification and the registry has not been updated as soon as practicable.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.5 With: Clause 11.2 and Clause 10.6 From: 01-Mar-22 To: 28-Feb-23	All practicable steps were not taken to ensure data is correct and that incorrect data was corrected as soon as practicable. Potential impact: Medium Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	I have recorded the controls as moderate in this area because there are still a small number of areas where improvement can be made. Very few of the registry related 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
Intellihub will put in place resource to focus on data quality for all ATH's. Intellihub is working with ATH's, Traders and our IT team to implement long-term solutions as we continue to identify areas for improvement; This work is part of our continuous improvement cycle.	Ongoing	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
As above	Ongoing	

3. PROCESS FOR A CHANGE OF MEP

3.1. Change of metering equipment provider (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 requirements are met in relation to updating the registry and advising the reconciliation manager.

The losing MEP must notify the gaining MEP of the proportion of the costs within 40 business days of the gaining MEP assuming responsibility. The gaining MEP must pay the losing MEP within 20 business days of receiving notification from the losing MEP.

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.

The gaining MEP is not required to pay costs if:

- *the losing MEP has agreed in writing that the gaining MEP is not required to pay costs, or the losing MEP has failed to provide notice within 40 business days,*
- *within three business days, the gaining MEP replaces, removes or recertifies the metering component or metering installation,*
- *the losing MEP has failed to provide notice of the costs to the gaining MEP within 40 business days.*

Audit observation

MTRX

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

BOPE

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

IHUB

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

Audit commentary

MTRX

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

BOPE

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

IHUB

IHUB 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

MTRX

I checked the audit compliance report for the period 1 March 2022 to 28 February 2023 for all records where MTRX became the MEP to evaluate the timeliness of updates.

BOPE

I checked the audit compliance report for the period 1 March 2022 to 28 February 2023 for all records where BOPE became the MEP to evaluate the timeliness of updates.

IHUB

I checked the audit compliance report for the period 1 May 2022 to 1 March 2023 for all records where IHUB became the MEP to evaluate the timeliness of updates.

Audit commentary

MTRX

The table below shows that there were 728 late updates to the registry out of 17,627 events. 217 of the 728 late updates were due to the trader's nomination being late. MTRX provided details of the causes of the late updates for a sample of 15 records which are listed below:

- MTRX updated the certification expiry dates of a large number of ICPs which were purchased from Contact Energy and had previously missed required inspections; the updates were backdated to the date which MTRX became responsible for eight of the examples,
- late nomination by the trader prevented MTRX from updating on-time for two examples,
- MTRX was unable to upload data due event by another MEP for one example, and
- exceptions found in information from ATH requiring follow-up for four examples.

Event	Year	Total ICPs	ICPs Notified Within 15 Days	ICPs Notified Greater Than 15 Days	Average Notification Days	Percentage Compliant
New MEP	2017	19	9	10	49	47%
	2018	188	163	25	15	87%
	2019	2,343	2,144	199	8	92%
	2020	1,026	722	304	Not calculated	70.37%
	2021	1,272	792	480	Not calculated	62.26%
	2022	732	482	250	Not calculated	65.85%
	Mar 2023	**17,627**	**16,899**	**728**	Not calculated	**95**

BOPE

The table below shows that there were 27 late updates to the registry out of 41 events. 10 of the 27 late updates were due to the trader's nomination being late. BOPE provided details of the causes of the late updates for the remaining 17 records which are listed below:

- inability to update the registry until losing MEP reversed a metering event dated after the BOPE event for five examples,
- corrections of incorrect~~ion~~ details from original update for eight examples,
- late provision of certification information from the ATH for three examples, and
- a processing delay causing late update by the MEP for one example.

Event	Year	Total ICPs	ICPs notified within 15 days	ICPs Notified Greater Than 15 Days	Percentage compliant
New MEP	Jan 2020	4,082	2,885	1,197	70.68%
	Mar 2022	3,665	3,560	105	97.14%
	Mar 2023	**41**	**14**	**27**	**34.15%**

IHUB

The table below shows that 93.30% of updates were within 15 business days. 1,431 late updates occurred from a total of 21,358 updates. 184 of the 1,431 late updates were due to the trader's nomination being late. IHUB provided details of the causes of the late updates for a sample of 15 records which are listed below:

- correction of metering data identified for ten examples,
- processing delays causing late updates by the MEP for two examples,
- inability to update the registry until losing MEP reversed a metering event dated after the IHUB event for one example, and
- two were still under investigation to de determine the cause at the time of the audit.

Event	Year	Total ICPs	ICPs notified within 15 days	ICPs Notified Greater Than 15 Days	Percentage compliant
New MEP	2018	Not recorded	Not recorded	0	100%
	2019	Not recorded	Not recorded	10	99.92%
	2020	Not recorded	Not recorded	724	98.11%
	2021	Not recorded	Not recorded	179	99.40%
	2022	1,498	1,063	435	97.09%
	Mar 2023	**21,358**	**19,927**	**1,431**	**93.30%**

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.2 With: Clause 2 of Schedule 11.4 From: 01-Mar-22 To: 28-Feb-23	2,186 registry updates later than 15 business days. Potential impact: Medium Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are in place to manage timeliness, but improvements are required to ensure late notifications from the field and exceptions are reduced. 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
Intellihub is continuing to review the mechanisms for interacting with contracted ATH's with a view to reducing time delays in retrieving data. Intellihub will also be investigating opportunities to improve work order exchanges with Traders. We will also be working with our IT team to implement long-term solutions.	Ongoing	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
As above Intellihub will continue to provide feedback on exceptions to ATH's and remind them of their obligations to promptly return paperwork.	Ongoing	

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

Code reference

Clause 5 of Schedule 10.6

Code related audit information

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

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

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

Audit observation

MTRX

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

BOPE

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

IHUB

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

Audit commentary

MTRX

This has not occurred, and no examples are available to examine. MTRX have stated that any information will be provided as necessary.

BOPE

This has not occurred, and no examples are available to examine. BOPE have stated that any information will be provided as necessary.

IHUB

This has not occurred, and no examples are available to examine. IHUB have stated that any information will be provided as necessary.

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 contact 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 MEP's 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

MTRX

I confirmed that MTRX has ceased to be responsible for some metering installations and checked if records were still available.

BOPE

I confirmed that BOPE has ceased to be responsible for some metering installations and checked if records were still available.

IHUB

I confirmed that IHUB has ceased to be responsible for some metering installations and checked if records were still available.

Audit commentary

MTRX

MTRX has ceased to be responsible for some metering installations and they still continue with their responsibilities, mainly in relation to the storage or records, which are kept indefinitely.

BOPE

BOPE has ceased to be responsible for some metering installations and they still continue with their responsibilities, mainly in relation to the storage or records, which are kept indefinitely.

IHUB

IHUB has ceased to be responsible for some metering installations and they still continue with their responsibilities, mainly in relation to the storage or 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 for each services access interface, 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

MTRX

I checked the suite of design reports provided by MTRX to relevant ATHs, and I checked that ATHs were correctly recording the design report in the certification records.

BOPE

I checked the suite of design reports provided by BOPE to relevant ATHs, and I checked that ATHs were correctly recording the design report in the certification records.

IHUB

I checked the suite of design reports provided by IHUB to relevant ATHs, and I checked that ATHs were correctly recording the design report in the certification records.

Audit commentary

MTRX

The current Intellihub suite of design reports was implemented in September 2021. All relevant details are included in the design reports and approval was gained from relevant distributors and traders. The ATHs had correctly recorded the design for all 86 MTRX metering installation records checked.

BOPE

The current Intellihub suite of design reports was implemented in September 2021. All relevant details are included in the design reports and approval was gained from relevant distributors and traders. The ATHs had correctly recorded the design for all 19 BOPE metering installation records checked.

IHUB

The current Intellihub suite of design reports was implemented in September 2021. All relevant details are included in the design reports and approval was gained from relevant distributors and traders. The ATHs had correctly recorded the design for all 50 IHUB metering installation records checked.

Audit outcome

Compliant

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

Code reference

Clause 9 of Schedule 10.6

Code related audit information

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

Audit observation

MTRX

I confirmed which ATHs had been used during the audit period, in order to check the Authority's website for scope of approval.

BOPE

I confirmed which ATHs had been used during the audit period, in order to check the Authority's website for scope of approval.

IHUB

I confirmed which ATHs had been used during the audit period, in order to check the Authority's website for scope of approval.

Audit commentary

MTRX

MTRX has used the Accucal, AMS, Delta, Intellihub and Wells ATHs during the audit period and they all have a current and appropriate scope of approval.

BOPE

BOPE has used the Accucal, AMS, Delta, Intellihub and Wells ATHs during the audit period and they all have a current and appropriate scope of approval.

IHUB

Intellihub has used Wells, Intellihub, and Delta ATHs during the audit period and they all have a current and appropriate scope of approval.

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

MTRX

I checked the processes used by MTRX to ensure compliance with the design and error thresholds stipulated in Table 1. I also checked the certification records for 86 metering installations.

BOPE

I checked the processes used by BOPE to ensure compliance with the design and with the error thresholds stipulated in Table 1. I also checked the certification records for 19 metering installations.

IHUB

I checked the processes used by IHUB to ensure compliance with the design and with the error thresholds stipulated in Table 1. I also checked the certification records for 50 metering installations.

Audit commentary

MTRX

With regard to the design of the installation (including data storage device and interrogation system), MTRX 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.

MTRX ensures the metering installation complies with the design report and the requirements of Part 10 by requiring ATH's to confirm the installation matches the design, or by requiring updates to be provided if the installation does not match the design. The design report was correctly recorded in the certification records for the 86 installations I checked.

My certification checks included 31 Category 2 metering installations certified using the comparative recertification method by the AMS, Delta, Intellihub and Wells ATHs. The certification records confirmed that the error and uncertainty was correctly calculated and recorded.

BOPE

With regard to the design of the installation (including data storage device and interrogation system), BOPE 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.

BOPE ensures the metering installation complies with the design report and the requirements of Part 10 by requiring ATH's to confirm the installation matches the design, or by requiring updates to be provided if the installation does not match the design. The design report was correctly recorded in the certification records for the 19 installations I checked.

My certification checks included 12 Category 2 metering installations certified using the comparative recertification method by the Delta, Intellihub and Wells ATHs. The certification records confirmed that the error and uncertainty was correctly calculated and recorded.

IHUB

With regard to the design of the installation (including data storage device and interrogation system), IHUB 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.

Intellihub ensures the metering installation complies with the design report and the requirements of Part 10 by requiring ATH's to confirm the installation matches the design, or by requiring updates to be provided if the installation does not match the design. The design report was correctly recorded in the certification records for the 50 installations I checked.

My certification checks included 12 Category 2 metering installations certified using the comparative recertification method by the Delta, Intellihub and Wells ATHs. The certification records confirmed that the error and uncertainty was correctly calculated and recorded.

Audit outcome

Compliant

4.4. Net Metering metering and Subtractive Metering (Clause 10.13A and 4(2)(a) of Schedule 10.7)

Code reference

Clause 10.13A and Clause 4(2)(a) of Schedule 10.7

Code related audit information

MEPs must ensure that the metering installation records imported electricity separately from exported electricity. For category 1 and 2 installations the MEP must ensure the metering installation records imported and exported electricity separately for each phase.

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

MTRX

I asked MTRX to confirm whether subtraction was used for any metering installations where they were the MEP and checked the configuration of meters used for recording import and export electricity.

BOPE

I asked BOPE to confirm whether subtraction was used for any metering installations where they were the MEP and checked the configuration of meters used for recording import and export electricity.

IHUB

I asked IHUB to confirm whether subtraction was used for any metering installations where they were the MEP and checked the configuration of meters used for recording import and export electricity.

Audit commentary

MTRX

MTRX does not have any metering installations where subtractive metering is used. MTRX meters are correctly configured to record import and export electricity separately.

BOPE

BOPE does not have any metering installations where subtractive metering is used. BOPE meters are correctly configured to record import and export electricity separately.

IHUB

IHUB does not have any metering installations where subtractive metering is used. IHUB meters are correctly configured to record import and export electricity separately.

Audit outcome

Compliant

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

MTRX

I checked the list file for all 17 ICPs where the metering category was greater than Category 2.

BOPE

I checked the list file for all 22 ICPs where the metering category was greater than Category 2.

IHUB

IHUB is not responsible for any metering installations at or above Category 3.

Audit commentary

MTRX

All 17 metering installations have HHR metering.

BOPE

All 22 metering installations have HHR metering.

IHUB

IHUB is not responsible for any metering installations at or above Category 3.

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

MTRX

MTRX is not responsible for any NSP metering.

BOPE

BOPE is not responsible for any NSP metering.

IHUB

IHUB is not responsible for any NSP metering.

Audit commentary

MTRX

MTRX is not responsible for any NSP metering.

BOPE

BOPE is not responsible for any NSP metering.

IHUB

IHUB 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

MTRX

MTRX is not responsible for any grid metering.

BOPE

BOPE is not responsible for any grid metering.

IHUB

IHUB is not responsible for any grid metering.

Audit commentary

MTRX

MTRX is not responsible for any grid metering.

BOPE

BOPE is not responsible for any grid metering.

IHUB

IHUB 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

MTRX

I checked the certification records for all ATHs to confirm this point is being considered at the time of certification.

BOPE

I checked the certification records for all ATHs to confirm this point is being considered at the time of certification.

IHUB

I checked the certification records for all ATHs to confirm this point is being considered at the time of certification.

Audit commentary

MTRX

The certification records for all ATHs contain a field or a statement in relation to this clause and the technician is required to confirm that installations are compliant and safe.

BOPE

The certification records for all ATHs contain a field or a statement in relation to this clause and the technician is required to confirm that installations are compliant and safe.

IHUB

The certification records for all ATHs contain a field or a statement in relation to this clause and the technician is required to confirm that installations are compliant and safe.

Audit outcome

Compliant

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

Code reference

Clauses 10.34(2), (2A), (2D) 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 installation's:

- *required functionality,*
- *terms of use,*
- *required interface format,*

- *integration of the ripple receiver and the meter,*
- *functionality for controllable load.*

This includes where the MEP is proposing to replace a metering component or metering installations with the same or similar design and functionality but excludes where the MEP has already consulted on the design with the distributor and trader.

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

Audit observation

MTRX

I checked whether there were any new or modified designs during the audit period.

BOPE

I checked whether there were any new or modified designs during the audit period.

IHUB

I checked whether there were any new or modified designs during the audit period.

Audit commentary

MTRX

Intellihub implemented its current suite of design reports across all three MEP codes in September 2021. All relevant details are included in the design reports and approval was gained from relevant distributors and traders prior to implementation.

BOPE

Intellihub implemented its current suite of design reports across all three MEP codes in September 2021. All relevant details are included in the design reports and approval was gained from relevant distributors and traders prior to implementation.

IHUB

Intellihub implemented its current suite of design reports across all three MEP codes in September 2021. All relevant details are included in the design reports and approval was gained from relevant distributors and traders prior to implementation.

Audit outcome

Compliant

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

Code reference

Clause 3 of Schedule 11.4

Code related audit information

If the MEP has an arrangement with the trader the MEP must advise the registry manager of the registry metering records, or any change to the registry metering records, for each metering installation for which it is responsible at the ICP, no later than 10 business days following:

a) the electrical connection of the metering installation at the ICP
b) any subsequent change to the metering installation's metering records

If the MEP is update the registry in accordance with 8(11)(b) of Schedule 10.6, 10 business days after the most recent unsuccessful interrogation.

If update the registry in accordance with clause 8(13) of Schedule 10.6, three business days following the expiry of the time period or date from which the MEP determines it cannot restore communications.

Audit observation

MTRX

I checked the audit compliance report for the period 1 March 2022 to 28 February 2023 to evaluate the timeliness of registry updates.

BOPE

I checked the audit compliance report for the period 1 March 2022 to 28 February 2023 to evaluate the timeliness of registry updates.

IHUB

I checked the audit compliance report for the period 1 May 2022 to 1 May 2023 to evaluate the timeliness of registry updates.

Audit commentary

MTRX

The table below shows that registry updates were on time for 79.76% of the 6,813 new connection updates made in the audit period. 132 of the 1,379 late updates late updates were due to the trader's nomination being late. MTRX provided details of the causes of the late updates for a sample of 20 records which are listed below:

- processing delays causing late update by the MEP for seven examples,
- delay in validation of paperwork from the field for one example,
- late field notification or generation of certification report for five examples,
- correction of incorrect details from original update for one example,
- updates of AMI flag for five examples, and
- incorrect nomination by trader causing late update for one example.

The table below shows that registry updates were on time for 82.25% of updates after recertification. There were 1,535 late updates and 7,113 updates were on time. MTRX provided details of the causes of the late updates for a sample of 20 records of the late updates which are listed below:

- processing delays causing late update by the MEP for seven examples,
- three examples were new MEP updates incorrectly identified by the audit compliance report which were within the 15-day requirement,
- late field notification or generation of certification report for six examples,
- delays in validation of paperwork from the field for two examples, and
- updates of AMI flag for two examples.

Event	Year	Total ICPs	ICPs Notified Within 10 Days	ICPs Notified Greater Than 10 Days	Average Notification Days	Percentage Compliant
New connection	2017	897	815	82	5.8	91%
	2018	1,699	1,435	264	7.7	85%

	2019	2,315	2,093	222	7.0	90%
	2020	4,400	3,704	696	Not calculated	84.18%
	2021	5,981	5,121	860	Not calculated	85.62%
	2022	**3,920**	**3,370**	**550**	Not calculated	85.97%
	2023	**6,813**	**5,434**	**1,379**	**Not calculated**	**79.76%**
Update (recertification updates only from 2020 onwards)	2017	139,000	5,000	134,000	N/A	3.6%
	2018	7,336	2,052	5,284	626	28%
	2019	22,503	20,864	1,639	5.0	93%
	2020	7,001	5,236	1,765	17.66	74.79%
	2021	8,157	6,599	1,558	24.14	80.90%
	2022	226,948	3,745	223,203	182.95	1.65%
	2023	**8,648**	**7,113**	**1,535**	**12.87**	**82.25%**

BOPE

The table below shows that registry updates were on time for 40% of the five new connection updates made during the audit period. One of the three late updates was due to a late trader nomination. BOPE provided details of the causes of the remaining two late updates which are listed below:

- late field notification or generation of certification report for one example, and
- correction of incorrect details from original update for one example.

The table below shows that registry updates were on time for 16.33% of updates after recertification. There were 41 late updates, and eight updates were on time. BOPE provided details of the causes of the late updates for a sample of ten records which are listed below:

- two examples were new MEP updates incorrectly identified by the audit compliance report which were within the 15-day requirement,
- four examples were late new MEP updates incorrectly identified by the audit compliance report,
- correction of incorrect details from original update for one example, and
- processing delays causing late update by the MEP for three examples.

Event	Year	Total ICPs	ICPs Notified Within 10 Days	ICPs Notified Greater Than 10 Days	Average Notification Days	Percentage Compliant
New connection	2016	20	12	8	Not calculated	60%
	2017	53	53	0	2.8	100%
	2018	40	40	0	1.9	100%

	2020	180	97	83	Not calculated	53.89%
	2022	686	640	46	Not calculated	93.30%
	2023	**5**	**2**	**3**	**Not calculated**	**40%**
Update	2016	589	383	206	109.4	65%
	2017	5,174	498	4,676	469	11%
	2018	3,833	3,708	125	21	97%
	2020	8,463	5,699	2,765	28.32	67.34%
	2022	6,127	5,830	297	7.95	95.15%
	2023	**49**	**8**	**41**	**104.04**	**16.33%**

IHUB

The table below shows that registry updates were on time for 83.63% of the 3,928 new connection updates made during the audit period. 157 of the 643 late updates were due to late trader nominations. Intellihub provided details of the causes of the late updates for a sample of 15 records which are listed below:

- correction of metering data identified for seven examples, and
- processing delays causing late update by the MEP for eight examples.

I was unable to accurately determine the total number of updates after recertification due to duplicates in the audit compliance report AC020MEP04 (Metering update after recertification). None of the reports account for reversed and replaced events, which leads to inaccurate reporting.

Event type	Year	Total ICPs	ICPs Notified Within 10 Days	Updated Late	% Compliant
New connection	2019	Not calculated	Not calculated	0	N/A
	2020	Not calculated	Not calculated	675	43.32%
	2021	Not calculated	Not calculated	252	92.47%
	2022	3,272	2,883	389	88.11%
	2023	**3,928**	**3,285**	**643**	**83.63%**

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.10 With: Clause 3 of Schedule 11.4 From: 01-Mar-22 To: 28-Feb-23	Some records updated on the registry later than 10 business days. Potential impact: Medium Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	I have recorded the controls as moderate in this area because they haven't changed since the last audit, and they are sufficient to ensure most updates are on time but there is room for improvement. The late updates for new connections occurred after the trader had populated their records, therefore the impact on participants, customers or settlement is minor, therefore the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
Intellihub continues to review how we process Service Requests to- and from- the field. Intellihub continues to expand the use of robotics (RPA) to improve timeliness. In addition, we are very close to go-live with the Oracle Field Services Cloud Application (OFSC) for our field service providers.	Ongoing	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Intellihub will continue to provide feedback on exceptions to contractors and remind them of their obligations to return paperwork promptly.	Ongoing	

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

MTRX

MTRX has AMI data collection systems, and these are considered "metering infrastructure". I checked that the systems operate as intended and are compatible with all metering components interrogated.

BOPE

BOPE has an AMI data collection system, and this is considered "metering infrastructure". I checked that the system operates as intended and is compatible with all metering components interrogated.

IHUB

IHUB has AMI data collection systems, and these are considered "metering infrastructure". I checked that the systems operate as intended and are compatible with all metering components interrogated.

Audit commentary

MTRX

There were no obvious issues with the operation of the AMI systems. All components operate as intended in an integrated manner.

BOPE

There were no obvious issues with the operation of the AMI system. All components operate as intended in an integrated manner.

IHUB

There were no obvious issues with the operation of the AMI systems. All components operate as intended in an integrated manner.

Audit outcome

Compliant

4.12. Responsibility for Metering at ICP (Clause 10.23A)

Code reference

Clause 10.23A

Code related audit information

If a metering installation at an ICP is to be decommissioned, but the ICP is not being decommissioned, the MEP that is responsible for decommissioning the metering installation must:

- *if the MEP is responsible for interrogating the metering installation, arrange for a final interrogation to take place before the metering installation is decommissioned, and provide the raw meter data from the interrogation to the responsible trader,*
- *if another participant is responsible for interrogating the metering installation, advise the other participant not less than 3 business days before the decommissioning of the time and date of the decommissioning, and that the participant must carry out a final interrogation.*

To avoid doubt, if a metering installation at an ICP is to be decommissioned because the ICP is being decommissioned:

- *the trader, not the MEP, is responsible for arranging a final interrogation of the metering installation*
- *the responsible trader must arrange for a final interrogation of the metering installation*

Audit observation

MTRX

I checked whether MTRX was the MEP at any decommissioned metering installations and whether notification had been provided to relevant traders.

BOPE

I checked whether BOPE was the MEP at any decommissioned metering installations and whether notification had been provided to relevant traders.

IHUB

I checked whether IHUB was the MEP at any decommissioned metering installations and whether notification had been provided to relevant traders.

Audit commentary

MTRX

There were no examples of decommissioned metering installations where the ICP was not also decommissioned.

BOPE

There were no examples of decommissioned metering installations where the ICP was not decommissioned.

IHUB

There were no examples of decommissioned metering installations where the ICP was not decommissioned.

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

MTRX

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

BOPE

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

IHUB

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

Audit commentary

MTRX

There have not been any examples of burden changes occurring during the audit period except at the time of recertification.

BOPE

There have not been any examples of burden changes occurring during the audit period except at the time of recertification.

IHUB

There have not been any examples of burden changes occurring during the audit period except at the time of recertification.

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

MTRX

I checked if there were any examples of changes in accordance with these clauses.

BOPE

I checked if there were any examples of changes in accordance with these clauses.

IHUB

I checked if there were any examples of changes in accordance with these clauses.

Audit commentary

MTRX

MTRX advised that there were no firmware or software changes during the audit period.

BOPE

BOPE advised that there were no firmware or software changes during the audit period.

IHUB

IHUB advised that there were no firmware or software changes during the audit period.

Audit outcome

Compliant

4.15. Temporary Electrical Connection (Clauses 10.29A)

Code reference

Clause 10.29A

Code related audit information

An MEP must not request that a grid owner temporarily electrically connect a POC to the grid unless the MEP is authorised to do so by the grid owner responsible for that POC and the MEP has an arrangement with that grid owner to provide metering services.

Audit observation

MTRX

MTRX is not responsible for any grid metering.

BOPE

BOPE is not responsible for any grid metering.

IHUB

IHUB is not responsible for any grid metering.

Audit commentary

MTRX

MTRX is not responsible for any grid metering.

BOPE

BOPE is not responsible for any grid metering.

IHUB

IHUB is not responsible for any grid metering.

Audit outcome

Compliant

4.16. Temporary Electrical Connection (Clause 10.30A)

Code reference

Clause 10.30A

Code related audit information

An MEP must not request that a distributor temporarily electrically connect an NSP that is not a POC to the grid unless the MEP is authorised to do so by the reconciliation participant responsible for that NSP and the MEP has an arrangement with that reconciliation participant to provide metering services.

Audit observation

MTRX

MTRX is not responsible for any NSP metering.

BOPE

BOPE is not responsible for any NSP metering.

IHUB

IHUB is not responsible for any NSP metering.

Audit commentary

MTRX

MTRX is not responsible for any NSP metering.

BOPE

BOPE is not responsible for any NSP metering.

IHUB

IHUB is not responsible for any NSP metering.

Audit outcome

Compliant

4.17. Temporary Electrical Connection (Clause 10.31A)

Code reference

Clause 10.31A

Code related audit information

Only a distributor may, on its network, temporarily electrically connect an ICP that is not an NSP. A MEP may only request the temporary electrical connection of the ICP if it is for the purpose of certifying a metering installation, or for maintaining, repairing, testing, or commissioning a metering installation at the ICP.

Audit observation

MTRX

I checked for examples where the metering installation certification date was prior to the initial electrical connection date of the ICP to determine whether there were any examples of temporary electrical connection for the purposes of testing and certification.

BOPE

I checked for examples where the metering installation certification date was prior to the initial electrical connection date of the ICP to determine whether there were any examples of temporary electrical connection for the purposes of testing and certification.

IHUB

I checked for examples where the metering installation certification date was prior to the initial electrical connection date of the ICP to determine whether there were any examples of temporary electrical connection for the purposes of testing and certification.

Audit commentary

MTRX

There were no temporary connections of ICPs identified where MTRX is the MEP during the audit period.

BOPE

There were no temporary connections of ICPs identified where BOPE is the MEP during the audit period.

IHUB

There were no temporary connections of ICPs identified where IHUB is the MEP during the audit period.

Audit outcome

Compliant

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

MTRX

I checked certification records for 86 metering installations, and I also checked all available inspection records to evaluate compliance with this clause.

BOPE

I checked certification records for 19 metering installations, and I also checked all available inspection records to evaluate compliance with this clause.

IHUB

I checked certification records for 50 metering installations, and I also checked all available inspection records to evaluate compliance with this clause.

Audit commentary

MTRX

All 86 certification reports were available. I also requested meter calibration reports and CT calibration reports for all 86 certifications, which were provided. I found some errors in the metering installation certification reports. The table below shows a breakdown of the number of records checked for each ATH and the details of the incorrect or missing fields.

		Quantity incorrect or missing				
Clause	**Field required**	**ACCL (2)**	**DELT (15)**	**MTRX (39)**	**VCOM (15)**	**WELL (15)**
9(1)(c) of Schedule 10.7	Record of increment in register value or accumulation of pulses over a measured time. Record that the register has advanced.	-	6	-	9	-
2(1)(e) of Schedule 10.8	For CT certification reports, determine and record the range that the in-service burden must be within.	2	-	1 (CTs certified by TWS)	-	-
26(4) of Schedule 10.7	Maximum interrogation cycle.	2	2	-	-	6
Table 3	Prevailing load test conducted using a working standard for recertification without meter replacement.	-	-	1	-	-
	Total	**4**	**8**	**1**	**9**	**6**

Intellihub has regularly met with the ATHs to work on improving the quality of information recorded in certification reports. The number of errors found in certification reports from ATHs has decreased significantly since the last audit. The Delta ATH resolved the issue with recording of pulses during raw meter data testing added in October 2022 and the AMS ATH is no longer used. The burden range issue has been resolved with the Accucal and Intellihub ATHs now recording burden range in their certification reports.

I repeat the recommendation from the last three audits that Intellihub requires better clarity in the Wells ATHs metering installation certification reports. I recommend that Intellihub requires Wells to change the layout of the report to include the more relevant items clearly on the front page, as follows:

- ICP,
- metering installation certification date,
- metering installation certification expiry date,
- metering category,
- certification type (selected component, comparative, fully calibrated, alternative, insufficient load, lower category),
- HHR or NHH,
- compensation factor, and
- electrical connection date (if known and if the ATH is also the agent).

Recommendation	Description	Audited party comment	Remedial action

Regarding Clause 4(1)(a) and (b) of Schedule 10.6	Require Wells to change the layout of the certification report to include the more relevant items clearly on the front page.	Intellihub will again review this issue with the WELLS ATH and explore options to achieve a resolution. We will include this audit recommendation within the summary of all technical and compliance issues identified with Metering Installation Certification Reports during the course of this audit.	Investigating

BOPE

All 19 certification reports were available. I also requested meter calibration reports and CT calibration reports for all 19 certifications, which were provided. I found some errors in the metering installation certification reports. The table below shows a breakdown of the number of records checked for each ATH and the details of the incorrect or missing fields.

		Quantity incorrect or missing			
Clause	**Field required**	**ACCL (3)**	**DELT (3)**	**MTRX (8)**	**WELL (5)**
9(1)(c) of Schedule 10.7	Record of increment in register value or accumulation of pulses over a measured time. Record that the register has advanced.	-	1	-	1
26(4) of Schedule 10.7	Maximum interrogation cycle.	3	2	-	1
Table 3	Prevailing load test conducted using a working standard for recertification without meter replacement.	-	1	1	1
	Total	**4**	**8**	**1**	**6**

IHUB

All 49 certification reports were available. I also requested metering component calibration reports for all 49 certifications, which were provided. I found some errors and incomplete information in the metering installation certification reports. The table below shows a breakdown of the number of records checked for each ATH and the details of the incorrect or missing fields.

		Quantity incorrect or missing		
Clause	**Field required**	**DELT (15)**	**MTRX (16)**	**WELL (19)**
9(1)(c) of Schedule 10.7	Record of increment in register value or accumulation of pulses over a measured time. Record that the register has advanced.	1	-	-
26(4) of Schedule 10.7	Maximum interrogation cycle.	5	-	-

Table 3	Prevailing load test conducted using a working standard for recertification without meter replacement.	-	-	1
24(2)(b) of Schedule 10.7	Compensation factor.	-	-	1
	Total	**6**	**0**	**2**

Audit outcome

Non-compliant

Non-compliance	**Description**
Audit Ref: 5.1 With: Clause 4(1)(a) and (b) of Schedule 10.6 From: 01-Mar-22 To: 28-Feb-23	Some inaccurate or incomplete certification records. Potential impact: Medium Actual impact: Low Audit history: Three times 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 for improvement. There is a minor impact on other participants; therefore, the audit risk rating is low.

Actions taken to resolve the issue	**Completion date**	**Remedial action status**
Intellihub undertook an internal audit of certification reports prior to this audit and provided feedback to all ATH's. In addition, the Delta ATH made significant improvements to their reports effective October 2022. Taken together, this has seen a significant reduction in the number of instances of inaccurate or incomplete certification records. The Intellihub MEP will continue to communicate with ATHs and provide them with the summary of all technical and compliance issues identified with Metering Installation Certification Reports during this audit. Intellihub disagrees with the Code requirement that a Prevailing load test conducted using a working standard for recertification without meter replacement is necessary.	Ongoing	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	

As above, Intellihub will continue to engage with ATH's on better clarity and presentation of certification reports to ensure these are fit for purpose. Over the past 18 months, Intellihub has instigated monthly Technical Compliance sessions with contracted Approved Test Houses Wells and Delta with the objectives of improving communication, alignment and ensuring we both meet Code Compliance. We have already seen good value out of these meetings, these will remain ongoing as avenues to discuss any Code or Technical issues as they arise.	Ongoing	

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

MTRX

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

BOPE

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

IHUB

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

Audit commentary

MTRX

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

BOPE

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

IHUB

IHUB 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

MTRX

I checked the MTRX record keeping processes to confirm compliance.

BOPE

I checked the BOPE record keeping processes to confirm compliance.

IHUB

I checked the IHUB record keeping processes to confirm compliance.

Audit commentary

MTRX

MTRX keeps records indefinitely.

BOPE

BOPE keeps records indefinitely.

IHUB

IHUB keeps records indefinitely.

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

MTRX

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

BOPE

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

IHUB

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

Audit commentary

MTRX

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

BOPE

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

IHUB

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

Audit outcome

Compliant

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

MTRX

I checked the switch breach detail report for the period 1 March 2022 to 1 March 2023 to confirm whether all responses were within 10 business days.

BOPE

I checked the switch breach detail report for the period 1 March 2022 to 1 March 2023 to confirm whether all responses were within 10 business days.

IHUB

I checked the switch breach detail report for the period 1 May 2022 to 1 March 2023 to confirm whether all responses were within 10 business days.

Audit commentary

MTRX

All MN files were sent within 10 business days.

BOPE

All MN files were sent within 10 business days.

IHUB

All MN files were sent within 10 business days.

Audit outcome

Compliant

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

Code reference

Clause 7 (1), (1A) (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 manager, in the prescribed form for each metering installation for which the MEP is responsible.

The MEP does not need to provide 'required' information if the information is only for the purpose of a distributor direct billing consumers on its network.

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 manager must derive from the metering equipment provider's records or the metering records contained within the current trader's system.

Audit observation

MTRX

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

BOPE

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

IHUB

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

Audit commentary

MTRX

Analysis of the list file and audit compliance report for the period 1 March 2022 to 28 February 2023 for all MTRX ICPs found the issues detailed in the table below:

Quantity of ICPs March 2023	Quantity of ICPs March 2022	Quantity of ICPs May 2021	Quantity of ICPs Mar 2020	Quantity of ICPs May 2019	Quantity of ICPs July 2018	Issue	Comments
0	0	1	6	10	52	Blank records on the registry.	-
0	0	0	0	0	0	Category 1 ICPs with CTs.	-
1	-	-	-	-	-	Installations without CT information populated on the registry.	CT's have been added to the Registry
0	0	0	0	0	0	Interim certified installations over Category 1.	-
0	1	0	0	0	0	Incorrect compensation factor.	-
0	0	0	0	0	0	Category 3 NHH.	-
0	0	54	124	205	9,044	Incorrect interim expiry dates. These appear to be fully	-

						certified with incorrect “I” flag.	
1	0	0	0	0	0	Category 1 with certification duration of more than 15 years.	Resolved
0	0	0	0	0	0	Category 1 with certification date the same as certification expiry date.	-
2	0	0	0	1	1	Incorrect certification date or certification expiry date for Cat 2.	Resolved
3	0	0	3	7	4	Incorrect certification date or certification expiry date for Cat 1.	Resolved
0	0	0	0	0	0	IN24 as register content code and period of availability.	-
0	0	0	0	0	0	IN0 as register content code and period of availability.	-
0	0	0	0	0	0	CN24 as register content code and period of availability. Some of these should be CN13.	-
0	0	0	0	0	0	D24 and should be D16.	-
0	0	0	0	0	0	N24.	-
0	0	0	0	0	0	UN0.	-
0	0	0	0	0	0	UN12 or UN19.	-
0	0	0	0	0	0	Day with no night.	-
0	0	0	0	0	0	Night with no day.	-
0	0	0	0	7	0	CN only on residential.	-
2,828	2,851	2,823	2,823	25 22 excluding	78	UN with a control device	UNL/VECT where MTRX have an arrangement /agreement

				duplicates			with traders; as the pilot is decommissioned in this network, we have changed the RCC to UN and in most cases, left the LCD on site. Metering Installations are certified with a design report variation.
0	0	2 both have meter cat9 (removed)	2 both have meter cat9 (removed)	7 2 have meter cat9 (removed)	10	Max interrogation cycle of zero days.	-
10,867	1,377	1,121	1,235	1,148	1,248	Controlled tariff with no load control device.	Intellihub recently acquired a new population of assets. Some information still needs to be uploaded to the Registry. One option being considered to collect missing LCD data is via a meter-reader survey which would include taking photographs.
140	142	127	119	40	31	Export ICPs with no injection register.	Intellihub have process in place to capture when the network changes the installation type to B. In

							those cases, we reach out to retailers and assess whether or not the installed meter is fit for purpose or if a site visit is required to change metering. Intellihub will not alter metering unless authorised by the retailer to do so.
0	8	1	11	1	13	Stat sampled with a certification duration greater than 7 years	-
0	0	0	0	0	7	Incorrect ATH recorded	-
13,098 803 during audit period	12,743 2,327 during audit period	11,573	-	-	-	Incorrect ATH identifier of VEMS used, should be recorded as VCOM since 28/9/2018	Intellihub Internal systems have now been updated (IWS). The next step is for Intellihub Sales and Marketing Team (account managers) to proactively work with our customers and then update the Registry.
1	-	-	-	-	-	Incorrect metering installation category recorded	Resolved

Intellihub conducted sample inspection of MTRX, BOPE and IHUB Category 1 installations in 2022 and the following issues were found:

Count of ICPs	Description

85	The inspector could not report on the installation certification expiry date, because the installation certification sticker was unreadable, faded, damaged or missing.
85	The inspector could not report on the installation certification date, because the installation certification sticker was unreadable, faded, damaged or missing.
117	The installation certification expiry date in the MEP's records did not match the installation certification sticker.
158	The installation certification date in the MEP's records did not match the installation certification sticker.
82	The installation certification number in the MEP's records did not match the installation certification sticker.
101	The installation certifying ATH in the MEP's records did not match the installation certification sticker.
2	Control device recorded in Intellihub systems, but not found on site.
3	The inspector could not compare records for installation certification as stickers were missing.
2	Load control found on site, but no serial number recorded in Intellihub systems.
1	Load control device was found on site with a serial number that was not readable.
3	Load control devices were found on site in a bridged state.
1	Load control device was found in a disconnected state and not in use.
2	Load control device found in a damaged state.

BOPE

Analysis of the list file and audit compliance report for the period 1 March 2022 to 28 February 2023 for all BOPE ICPs found the issues detailed in the table below:

Quantity 2023	Quantity 2022	Quantity 2020	Quantity 2018	Quantity 2017	Quantity 2016	Issue	Comments
0	0	0	0	1	1	Installations without CT information populated on the registry.	-
0	0	0	0	1	2	Metering installation with blank records.	-
0	0	0	0	0	2	ICPs with compensation factors above 3 but recorded as Category 1.	-
2	0	0	0	0	1	Incorrect compensation factor recorded in the registry.	Resolved
0	0	0	0	0	1	"Invalid" certification date recorded on the registry.	-

0	0	0	0	0	40	Category 1 installations with certification duration of more than 15 years.	-
0	0	1	14,371 0	0	2	Category 2 installations certified for longer than the period allowed in Table 1.	-
0	6	5	3	7	246	ICPs with IN24.	-
0	1	1	0	1	2	CN only with a residential ANZSIC code indicating domestic use. This is a pump and it's possible the ANZSIC code may be incorrect (this is a trader field outside the MEPs control). The CN code is correct.	-
2	2	4	0	1	0	Night without Day, these are NC there is no day required. (compliant)	Compliant
2	2	-	-	-	-	Day + Night not equal to 24	Same ICPs per above section – Compliant.
1,473	937	0	0	9	1,300	Controlled tariff with no load control device.	Options we are working towards are as follows: Retailer engagement (meter reader photos), Site visits by field service providers to confirm presence if LCD's.
0	0	1	1	-	-	UN without 24	-
0	0	7	-	-	-	Incorrect ATH	-
1	1	-	-	-	-	Compensation factor of 3 on recently certified installations	A number of site visits have been made to this address, to assess what is

							required to resolve this compliance issue. There is no sign of lost revenue on site. T The he pump motor is in good condition and is evenly balanced which means that the existing metering is not inaccurate. This is a rural property with customer-owned overhead lines and poles leading to a remote 3-phase pump station. A plan is currently in place to resolve this issue in consultation with the Trader.
5	-	-	-	-	-	Export ICPs with no injection register.	Intellihub have process in place to capture when the network changes the installation type to B. In those cases, we reach out to retailers and assess to see if the current meter on site is fit for purpose or if a site visit is required to change metering. Intellihub will not alter metering unless authorised by the retailer to do so.
3	-	-	-	-	-	Incorrect metering installation category recorded	One ICP corrected to

							Category 3 on the Registry. Two further ICP's in progress of being checked.
6						Maximum interrogation cycle of 0	Resolved. MIC has been updated on the Registry.

IHUB

One Category 1 ICP with incorrect certification and certification expiry dates was identified by the audit compliance report. Details of the incorrect dates are as follows:

ICP	Certification date	Certification expiry date	Registry certification date	Registry certification expiry date	Actions taken
0009865178LNFAE	22 February 2023	22 February 2038	1 March 2023	1 March 2038	Resolved

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 6.2 With: Clause 7 (1), (2) and (3) of Schedule 11.4 From: 01-Mar-22 To: 28-Feb-23	Some registry records incomplete or incorrect. Potential impact: Medium Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2		
Audit risk rating	**Rationale for audit risk rating**		
Low	I have recorded the controls as moderate in this area because there are still a small number of areas where improvement can be made. Very few of the discrepancies have an impact on participants, customers or settlement. The only relevant ones in this regard are tariff and compensation factor 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**

Intellihub has good controls in place to manage the data discrepancies to the Registry. Intellihub will continue to work with Participants for access to sites where site visits are required to help resolve some of the discrepancies identified in the table above and will place appropriate focus on achieving quality outcomes.	Ongoing	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
As above	Ongoing	

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

MTRX

I conducted a walkthrough of the validation processes to confirm compliance. I checked all records in the audit compliance report to confirm whether the timeliness requirements were being met.

BOPE

I conducted a walkthrough of the validation processes to confirm compliance. I checked all records in the audit compliance report to confirm whether the timeliness requirements were being met.

IHUB

I conducted a walkthrough of the validation processes to confirm compliance. I checked all records in the audit compliance report to confirm whether the timeliness requirements were being met.

Audit commentary

MTRX

This clause is specific and prescriptive, and it requires a complete metering record comparison to be undertaken. MTRX is conducting a complete validation, but errors are not always being corrected within five business days, as recorded in **section 4.10**.

BOPE

Prior to the acquisition by Intellihub BOPE used daily discrepancy reporting from the metering database (CMMS) and all issues were resolved within five business days. Intellihub stopped using CMMS on 1st October 2021 and discrepancy reporting has not taken place since then.

IHUB

Intellihub uses its DCN-Rec process to compare check for any differences between Intellihub's records and the registry. A check on the reports confirmed that the requirement to complete the comparison each month is met. The report is checked on the same day it is run but corrections are not always able to be made within five business days.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.3 With: Clause 6 of Schedule 11.4 From: 01-Oct-21 To: 05-Apr-22	MTRX and IHUB - Discrepancies not resolved within five business days. BOPE – Discrepancy report not run since 1st October 2021. Potential impact: Medium Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	I have recorded the controls as moderate in this area because discrepancy reporting processes are strong but are not currently in place for BOPE. 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
Intellihub will continue to resolve discrepancies which have the highest impact on participants.	Ongoing	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Intellihub is committed to an ongoing focus on continuous improvements to the quality and completeness of all of its transactions.	Ongoing	

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), 19(3A) or 19(3C)*
- *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:*
  - *(i) the MEP has not received the report under 6(2A)(a) or 6(2A)(b); or*
  - *(ii) the report demonstrates the maximum current is higher than permitted; or*
  - *(iii) the report demonstrates the electricity conveyed exceeds the amount permitted,*
- *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.*
- *j) the installation is an HHR AMI installation certified after 29 August 2013 and*
  - *(i) the metering installation is not interrogated within the maximum interrogation cycle; or*
  - *(ii) the HHR and NHH register comparison is not performed; or*
  - *(iii) the HHR and NHH register comparison for the same period finds a difference of greater than 1 kWh and the issue is not remediated within three business days.*

A metering equipment provider must (unless the installation has been recertified within the 10 business days) 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.

If any of the events in Clause 20(1)(j) of Schedule 10.7 have occurred, update the AMI flag in the registry to 'N'.

Audit observation

MTRX

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

BOPE

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

IHUB

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

Audit commentary

MTRX

I checked all of the points mentioned above as follows:

Bridged meters

I checked four examples of bridged meters from the audit period, MTRX did not update the registry with cancellation of the certification within 10 business days for two of the four ICPs. Non-compliance is recorded for these two ICPs. Details of all four ICPs are included in the table below.

ICP	Date notified	Date certification cancelled on registry	Business days to update registry
1000010961BP662	22/02/2023	23/02/2023	1
0000186406UNDE1	3/02/2023	23/02/2023	13
0000207134UNDA8	19/12/2022	23/02/2023	44
0433348046LC1FE	28/02/2023	1/03/2023	1

Current transformer in-service burden

I checked a sample of 43 Category 2 and above certifications from all ATHs used. All 43 certification records checked had in-service burden within the range of the current transformers. MTRX requires ATHs to install burden resistors when required to ensure the in-service burden is within the burden range of the current transformers. The last audit identified six metering installations that had been certified by the Wells ATH with burden lower than the burden range of the current transformers. I confirmed that all six metering installations had been recertified with correct burden.

Bridged control devices

MTRX provided a list of 50 bridged control devices. I checked a sample of 10 of the 50 and confirmed that for all 10 examples the metering installation certification was cancelled at the time MTRX was advised of the bridging. Compliance is confirmed.

Insufficient load certification

I checked the list maintained by MTRX of installations requiring monitoring and confirmed that monitoring had taken place each month. Compliance is confirmed.

Certification at a lower category

I checked the list maintained by MTRX of installations requiring monitoring and confirmed that monitoring had taken place each month. Compliance is confirmed.

Inspection

Two Category 2 metering installations were due for inspection. Inspections were not conducted for either metering installation within the applicable period. Certification has subsequently been cancelled for these ICPs. Non-compliance is recorded as the certification for ICP 0000004841ENECA was not cancelled within 10 business days. Non-compliance is recorded in **section 8.2** for the missed inspections.

Details of the ICPs are included in the following table.

ICP	Category	Certification Date	Latest inspection date	Certification cancelled	Business days to cancel
0000004841ENECA	2	5 June 2012	5 December 2022	15 February 2023	46
0000100228EN78D	2	2 August 2012	2 February 2023	15 February 2023	8

Sample inspection was completed for Category 1 metering installations as required. Compliance is confirmed.

Maximum interrogation cycle

I checked for examples where meters were not interrogated within the maximum interrogation cycle and the AMI flag is still "Y" and certification was not cancelled. As recorded in **section 10.5** no examples were identified.

Sum-check Failure

I checked for examples where meters had not passed sum-check and certification was not cancelled. As recorded in **section 10.9** the MTRX process ensures that failures are resolved within three business days or certification is cancelled. MTRX provided a list of 1,506 meters that had not passed a sum-check and certification had been cancelled from the audit period. I checked a sample of 15 and found that certification had not been cancelled within 10 business days for five of the 15 meters. Non-compliance is recorded as the certification was not cancelled within 10 business days for these five meters.

BOPE

I checked all of the points mentioned above as follows:

Bridged meters

I checked two examples of bridged meters from the audit period, BOPE did not update the registry with cancellation of the certification within 10 business days for both of the ICPs. Non-compliance is recorded. Details of the two ICPs are included in the table below.

ICP	Date notified	Date certification cancelled on registry	Business days to update registry
1000010130BP222	29/12/2022	18/01/2023	13
0001921180PC107	28/04/2022	23/02/2023	208

Inspection

Inspection was conducted for the one Category 3 metering installation due for inspection during the audit period.

Sample inspection was completed for Category 1 metering installations as required. Compliance is confirmed.

Maximum interrogation cycle

I checked for examples where meters were not interrogated within the maximum interrogation cycle and the AMI flag is still "Y" and certification was not cancelled. As recorded in **section 10.5** no examples were identified.

Current transformer in-service burden

I checked the certification records for a sample of 15 Category 2 metering installations certified during the audit period. My checks confirmed that the in-service burden was appropriate in all 15 records. BOPE requires ATHs to install burden resistors when required to ensure the in-service burden is within the burden range of the current transformers.

Sum-check Failure

I checked for examples where meters had not passed sum-check and certification was not cancelled. As recorded in **section 10.9** the BOPE process ensures that failures are resolved within three business days or certification is cancelled within 10 business days. BOPE provided the details of two meters which had not passed a sum-check and certification had been cancelled from the audit period. In both cases certification was cancelled within 10 business days.

IHUB

I checked all of the points mentioned above as follows,

Bridged meters

I checked five examples of bridged meters from the audit period, IHUB did not update the registry with cancellation of the certification within 10 business days for one of the five ICPs. Non-compliance is recorded for one ICP. Details of all five ICPs are included in the table below.

ICP	Date notified	Date certification cancelled on registry	Business days to update registry
1000541854PCE26	22/02/2023	27/02/2023	3
0000043252UN519	25/01/2023	7/02/2023	8
0000376519TUE39	18/11/2022	30/11/2022	8
1001120040UNB14	8/02/2023	27/02/2023	13
0000194063TR226	17/11/2022	27/07/2022	-82

Bridged control devices

IHUB provided the details of six examples of bridged control devices. In all six examples the metering installation certification was cancelled at the time IHUB was advised of the bridging. Compliance is confirmed.

Current transformer in-service burden

I checked the certification records for a sample of 21 Category 2 metering installations certified during the audit period. My checks confirmed that the in-service burden was appropriate in all 21 records. Intellihub requires ATHs to install burden resistors when required to ensure the in-service burden is within the burden range of the current transformers.

Maximum interrogation cycle

I checked for examples where meters were not interrogated within the maximum interrogation and the AMI flag is still "Y" and certification was not cancelled. As recorded in **section 10.5** the Intellihub process ensures that the AMI flag is changed to "N" prior the maximum interrogation cycle being reached. Compliance is recorded.

Sum-check Failure

I checked for examples where meters had not passed sum-check and certification was not cancelled. As recorded in **section 10.9** the IHUB process ensures that failures are resolved within three business days or certification is cancelled. IHUB provided a list of 354 meters that had not passed a sum-check and certification had been cancelled from the audit period. I checked a sample of 15 and found that certification had not been cancelled within 10 business days for five of the 15 meters. Non-compliance is recorded as the certification was not cancelled within 10 business days for these five meters.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.4 With: Clause 20 of Schedule 10.7 From: 01-Mar-22 To: 28-Feb-23	Certification not cancelled on the registry within 10 business days for: • one Category 2 ICP with missed inspection, • ten meters (of a sample of 30) where sum-check failure was not resolved within three business days, and • five bridged Category 1 meters. Potential impact: Medium Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	I have recorded the controls as moderate in this area because most processes are managed with sufficient controls to avoid cancellation of certification. There is a minor impact on other participants; therefore, the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
Category 2 missed inspection issue was identified shortly after the change of ownership and MEP to Intellihub on 01/10/2022. Certification has subsequently been cancelled on the Registry.	Resolved	Investigating
Sum-Check failure. Intellihub is committed to an ongoing focus on continuous improvements and will put measures in place to ensure certification is cancelled within the required timeframes.	Ongoing	
The cause for delays in the cancellation of certification of bridged meters has been identified and the issue has been resolved.	Resolved	
Preventative actions taken to ensure no further issues will occur	**Completion date**	
	31/05/2022	

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

MTRX

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 MTRX not using the prescribed form.

BOPE

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 BOPE not using the prescribed form.

IHUB

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 IHUB not using the prescribed form.

Audit commentary

MTRX

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 MTRX not using the prescribed form.

BOPE

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 BOPE not using the prescribed form.

IHUB

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 IHUB not using the prescribed form.

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

MTRX

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

- the audit compliance report was checked to identify ICPs with expired certification, and
- I checked ICPs where certification was cancelled to ensure the registry was updated accordingly.

BOPE

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

- the audit compliance report was checked to identify ICPs with expired certification, and
- I checked ICPs where certification was cancelled to ensure the registry was updated accordingly.

IHUB

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

- the audit compliance report was checked to identify ICPs with expired certification, and
- I checked ICPs where certification was cancelled to ensure the registry was updated accordingly.

Audit commentary

MTRX

The registry shows 10,643 ICPs with uncertified metering installations including 10,311 at Category 1, two at Category 2 and one at Category 3. 330 of these ICPs show as previously interim certified. 5,830 ICPs were previously certified, and certification expired or was cancelled during the audit period. There was an increase in the number of expired metering installations due to Intellihub's purchase of a number of expired and cancelled metering installations from Contact Energy in October 2022.

MTRX provided a breakdown of a sample of 499 uncertified ICPs as detailed in the following table:

Reason for cancellation	Number of ICPs
Expired	381
MTRX no longer the MEP	41
Sum-check	77

BOPE

The registry shows 421 ICPs with uncertified metering installations including 399 at Category 1, and one at Category 2. 21 of these ICPs show as previously interim certified. 289 ICPs were previously certified, and certification expired or was cancelled within the audit period.

BOPE provided a breakdown of a sample of 52 uncertified ICPs as detailed in the following table:

Reasons	Number of ICPs
Failed sum-check	2
Cancelled due to exceeding 100 amps Category 1 metering installation	2
Bridged meter or relay	9
BOPE no longer the MEP	27
Expired	11
No register read	1

IHUB

The registry shows 3,307 ICPs with uncertified metering installations including 3,296 at Category 1, and 11 at Category 2. 2,613 ICPs were previously certified, and certification expired or was cancelled within the audit period.

IHUB provided details of the reasons for cancellation as follows:

- 3,228 ICPs with failed sum-checks,
- one ICP not interrogated during the maximum interrogation cycle from the previous audit period,
- 46 ICPs with possible bridging of meters or control devices advised by traders,
- 30 New MEO ex CTCT Legacy expired, and
- Two New_MEO_ex CTCT Inspection_Uncompleted.

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-Jan-97 To: 28-Feb-23	Certification expired, cancelled or late for 14,371 ICPs. Potential impact: High Actual impact: Medium Audit history: Multiple times Controls: Strong Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Medium	I have recorded the controls as strong in this area because at the time of the audit Intellihub demonstrated its recertification programme which will address a significant portion of the ICPs with expired certification. 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
Intellihub has an ongoing program of recertification using the selected component method for legacy, uncertified meters (for which statistical sampling is not an available option). For example, unknown meter makes and models. Intellihub is also commencing a programme of recertification by statistical sampling project, commencing in May 2023. This should address a significant proportion of the expired Category 1 ICP's.	Ongoing	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
As above	Ongoing	

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

MTRX

I checked the certification records for 86 metering installations to confirm compliance.

BOPE

I checked the certification records for 19 metering installations to confirm compliance.

IHUB

I checked the certification records for 50 metering installations to confirm compliance.

Audit commentary

MTRX

Certification activities have been conducted by the Accucal, AMS, Delta, Intellihub and Wells ATHs.

Category 2 certification tests

The certification records for all 43 Category 2 and above metering installations included test results which confirmed that all required testing had been completed.

Category 1 certification tests

I checked a sample of 43 Category 1 certification records to confirm if all required testing had been completed. All 43 certification records included confirmation that testing had been conducted and all required test results were recorded in all records from the Intellihub and Wells ATHs. There were nine certifications completed by the AMS ATH and six certifications completed by the Delta ATH where the increment in register value or accumulation of pulses over a measured time was not recorded when conducting a raw meter data test. The Delta ATH resolved the issue with recording of pulses during raw meter data testing added in October 2022 and the AMS ATH is no longer used by Intellihub.

A breakdown of the certification reports checked and recording of test results is detailed in the table below:

ATH	Total Cat 1 reports checked	Reports with test results not recorded
AMS	9	9
Delta	13	6
Intellihub	13	0
Wells	8	0
Total	43	15

There was one example where a Category 1 metering installation was recertified without a meter change taking place. Table 3 of Schedule 10.1 requires that a prevailing load test is conducted when a Category 1 metering installation is recertified without the meter being changed. Clause 9(1)(a) requires that prevailing load tests must be conducted using a working standard connected to the metering installation. I have recorded non-compliance as the ATH did not conduct a prevailing load test using a working standard in this case. Details of the certification is included in the following table:

ICP	ATH	Certification date	Reason for recertification
1002107381LCFCF	MTRX	30 August 2022	Previously certified under different ICP number.

BOPE

Certification activities have been conducted by the AccuCal, Delta, Intellihub and Wells ATHs.

Category 2 certification tests

The certification records for all 15 Category 2 and above metering installations included test results which confirmed that all required testing had been completed.

Category 1 certification tests

I checked a sample of four Category 1 certification records to confirm if all required testing had been completed. The certification records included a statement confirming testing had been completed. There was one certification completed by the Delta ATH where the increment in register value or accumulation of pulses over a measured time was not recorded when conducting a raw meter data test. The Delta ATH resolved the issue with recording of pulses during raw meter data testing added in October 2022.

A breakdown of the certification reports checked and recording of test results is detailed in the table below:

ATH	Total Cat 1 reports checked	Reports with test results not recorded
Delta	1	1
Intellihub	2	0
Wells	1	0
Total	4	1

There were three examples where Category 1 metering installations were recertified without a meter change taking place. Table 3 of Schedule 10.1 requires that a prevailing load test is conducted when a Category 1 metering installation is recertified without the meter being changed. Clause 9(1)(a) requires that prevailing load tests must be conducted using a working standard connected to the metering installation. I have recorded non-compliance as the ATHs did not conduct a prevailing load test using a working standard in this example. Details of the ICPs are included in the following table:

ICP	ATH	Certification date	Reason for recertification
0000171498UN061	DELT	8 September 2022	Recertification after unbridging meter.
0000943403TUAA4	WELL	23 September 2022	Recertification after unbridging control device.
1000009721BP68D	MTRX	6 April 2022	Recertification after meter re-sealed.

IHUB

Certification activities have been conducted by the Delta, Intellihub and Wells ATHs.

Category 2 certification tests

I checked a sample of 21 Category 2 certification reports. The certification reports confirmed that all testing had been completed and the test results were recorded.

Category 1 certification tests

I checked a sample of 29 certification reports for Category 1 metering installations to confirm if all required testing had been completed. All 29 certification reports contained a statement confirming testing had been completed. There was one certification completed by the Delta ATH where the increment in register value or accumulation of pulses over a measured time was not recorded when

conducting a raw meter data test. The Delta ATH resolved the issue with recording of pulses during raw meter data testing added in October 2022.

A breakdown of the certification reports checked and recording of test results is detailed in the table below:

ATH	Total Cat 1 reports checked	Reports with test results not recorded
Delta	9	1
Intellihub	10	0
Wells	10	0
Total	29	1

There was one example where a Category 1 metering installation was recertified without a meter change taking place. Table 3 of Schedule 10.1 requires that a prevailing load test is conducted when a Category 1 metering installation is recertified without the meter being changed. Clause 9(1)(a) requires that prevailing load tests must be conducted using a working standard connected to the metering installation. I have recorded non-compliance as the ATH did not conduct a prevailing load test using a working standard in this case. Details of the certification is included in the following table:

ICP	ATH	Certification date	Reason for recertification
0000001015UH898	MTRX	21 February 2023	Recertification after meter configuration change.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 7.2 With: Clause 10.38(b) From: 01-Mar-22 To: 28-Feb-23	All test results not recorded in 17 certification records. Prevailing load test not conducted for five Category 1 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	The controls are recorded as moderate as ATH processes ensure that testing requirements are met in most scenarios but there is room for improvement. The impact is low as the accuracy of the metering installation is unlikely to have been impacted by the prevailing load test not being completed, the audit risk rating is low.
Actions taken to resolve the issue	**Completion date** / **Remedial action status**

Considerable improvements have been made by contracted ATH's over the past 6 months, especially since October 2022.The audit findings primarily relate to the period prior to this date. Prevailing load test not conducted for Category 1 ICP's: Intellihub interpretation of Line 2 of Table 3 in Part 10 is that a Prevailing Load Test should not be required when a meter is not being changed, and the installation certification expiry date remains unchanged. We are currently awaiting a response from the Authority to clarify this. In the interim, Intellihub is ensuring that all other tests and checks are completed including a raw meter data output test to confirm installation accuracy.	Ongoing	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
As above	Ongoing	

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

MTRX

I checked the certification records for 43 metering installations to confirm compliance.

BOPE

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

IHUB

I checked the certification records for 21 metering installations to confirm compliance.

Audit commentary

MTRX

All relevant metering is compliant with this clause.

BOPE

All relevant metering is compliant with this clause.

IHUB

All relevant metering is 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

MTRX

This clause relates to Transpower as an MEP.

BOPE

This clause relates to Transpower as an MEP.

IHUB

This clause relates to Transpower as an MEP.

Audit commentary

MTRX

This clause relates to Transpower as an MEP.

BOPE

This clause relates to Transpower as an MEP.

IHUB

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

MTRX

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

BOPE

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

IHUB

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

Audit commentary

MTRX

There are no examples of burden changes having occurred.

BOPE

There are no examples of burden changes having occurred.

IHUB

There are no examples of burden changes having occurred.

Audit outcome

Compliant

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

MTRX

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

BOPE

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

IHUB

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

Audit commentary

MTRX

MTRX maintains a list of Category 2 metering installations with CT ratios above 500/5 and conducts monthly monitoring to ensure that demand has not exceeded the allowable threshold. I checked the latest monitoring report containing 30 ICPs which confirmed monitoring had taken place and none had exceeded the threshold.

I checked the certification records for six metering installations certified at a lower category during the audit period. All six certification records included a statement from the ATH advising the MEP to monitor load. All six had been added to the monthly monitoring list by MTRX.

Three metering installations with CT ratios higher than the Category 2 threshold were identified by the audit compliance report. All three were at ICPs which had been purchased by Intellihub from Contact Energy during the audit period. MTRX provided copies of the certification records which confirmed that protection was in place to limit the current to the Category 2 limit for all three ICPs.

BOPE

BOPE maintains a list of Category 2 metering installations with CT ratios above 500/5 and conducts monthly monitoring to ensure that demand has not exceeded the allowable threshold. I checked the latest monitoring report containing three ICPs which confirmed monitoring had taken place and none had exceeded the threshold. All three metering installations were certified during the audit period. I checked the certification records and confirmed that each included a statement from the ATH advising the MEP to monitor load.

IHUB

There were no ICPs certified at a lower category.

Audit outcome

Compliant

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

Code reference

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

Code related audit information

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

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

Audit observation

MTRX

I checked for examples of insufficient load certification.

BOPE

I checked for examples of insufficient load certification.

IHUB

I checked for examples of insufficient load certification.

Audit commentary

MTRX

There were no examples of insufficient load certification taking place during the audit period.

MTRX maintains a list of metering installations certified with insufficient load and conducts monthly monitoring to check if sufficient load is available for the ATH to conduct certification tests. I checked the latest monitoring report containing three ICPs which confirmed monitoring had taken place and that none had met the sufficient load threshold.

BOPE

BOPE does not allow certification in accordance with this clause. Load banks are required to be used to increase the load to conduct testing.

IHUB

There were no examples of insufficient load certification. It is intended that ATHs will connect additional load to carry out certification testing at the time of certification.

Audit outcome

Compliant

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

Code reference

Clause 14(6) of Schedule 10.7

Code related audit information

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

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

Audit observation

MTRX

I checked three examples of insufficient load certification and the process to confirm compliance.

BOPE

I checked for examples of insufficient load certification.

IHUB

I checked for examples of insufficient load certification.

Audit commentary

MTRX

In all three cases sufficient load for certification tests has yet to be identified. MTRX demonstrated that it understands the requirement to complete testing when sufficient load is identified.

BOPE

BOPE does not allow certification in accordance with this clause. Load banks are required to be used to increase the load to conduct testing.

IHUB

There were no examples of insufficient load certification. It is intended that ATHs will connect additional load to carry out certification testing at the time of certification.

Audit outcome

Compliant

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

Code reference

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

Code related audit information

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

- *advise the market administrator, by no later than 10 business days after the date of certification of the metering installation, of the details in clause 32(2)(a) of Schedule 10.7,*
- *respond, within five business days, to any requests from the market administrator for additional information,*
- *ensure that all of the details are recorded in the metering installation certification report,*
- *take all steps to ensure that the metering installation is certified before the certification expiry date.*

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

Audit observation

MTRX

I checked the registry records to confirm whether alternative certification had been applied.

BOPE

I checked the registry records to confirm whether alternative certification had been applied.

IHUB

I checked the registry records to confirm whether alternative certification had been applied.

Audit commentary

MTRX

Alternative certification has not been applied to any metering installations.

BOPE

Alternative certification has not been applied to any metering installations.

IHUB

Alternative certification has not been applied to any metering installations.

Audit outcome

Compliant

7.10. Timekeeping Requirements (Clause 23 of Schedule 10.7)

Code reference

Clause 23 of Schedule 10.7

Code related audit information

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

a) has a time keeping error of not greater than an average of 2 seconds per day over a period of 12 months,
b) is monitored and corrected at least once every 12 months.

Audit observation

MTRX

I asked MTRX whether there were any metering installations with devices switching meter registers or any metering installations with time dependant register content codes where the AMI flag had been changed to "N" for more than 12 months.

BOPE

I asked BOPE whether there were any metering installations with devices switching meter registers or any metering installations with time dependant register content codes where the AMI flag had been changed to "N" for more than 12 months.

IHUB

I asked IHUB whether there were any metering installations with time switches switching meter registers or any metering installations with time dependant register content codes where the AMI flag had been changed to "N" for more than 12 months.

Audit commentary

MTRX

MTRX confirmed that there are 13 metering installations with meter registers controlled by devices that are not remotely monitored that have not been monitored and corrected for more than 12 months. For these ICPs the requirement to monitor and correct time at least once every 12 months has not been met.

MTRX has AMI meters with configurations using multiple registers that are remotely monitored to meet the requirements of Clause 8(4) of Schedule 10.6. In cases where AMI meters fail to communicate the MEP switches the AMI flag in the registry to "N" to avoid cancellation of certification. When the meter is not communicating, its time is no longer monitored, and it becomes subject to the requirements of this clause if there are registers switched by the time of meter. Nine meters with time dependant register content codes (D/N or DIN/NIN) where the AMI flag had been changed to "N" due to an inability to communicate for more than 12 months were identified. I have recorded non-compliance for these ICPs as the requirement to monitor and correct time at least once every 12 months has not been met.

BOPE

BOPE confirmed that there are 32 metering installations with meter registers controlled by devices that are not remotely monitored that have not been monitored and corrected for more than 12 months. For these meters the requirement to monitor and correct time at least once every 12 months has not been met.

IHUB

Intellihub confirmed that there are no metering installations with meter registers controlled by devices that are not remotely monitored.

Intellihub has AMI meters with configurations using multiple registers that are remotely monitored to meet the requirements of Clause 8(4) of Schedule 10.6. In cases where AMI meters fail to communicate the MEP switches the AMI flag in the registry to "N" to avoid cancellation of certification. When the meter is not communicating, its time is no longer monitored, and it becomes subject to the requirements of this clause if there are registers switched by the time of meter. 48 meters with time dependant register content codes (D/N or DIN/NIN) where the AMI flag had been changed to "N" due to an inability to communicate for more than 12 months were identified. I have recorded non-compliance for these ICPs as the requirement to monitor and correct time at least once every 12 months has not been met.

I repeat the recommendation from the previous audit that Intellihub develops a process to identify meters which become subject to the timekeeping Requirements of Clause 23 of Schedule 10.7 and ensure the time is monitored and corrected as required.

Recommendation	Description	Audited party comment	Remedial action
Regarding Clause 10.38(b)	Develop a process to identify meters which become subject to the timekeeping Requirements of Clause 23 of Schedule 10.7 and ensure the time is monitored and corrected as required.	Intellihub has developed a specific report to identify meters which become subject to the timekeeping Requirements, with AMI Comms = N.	Investigating

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 7.10 With: Clause 23 of Schedule 10.7 From: 14-Aug-21 To: 05-Apr-22	102 meters with time dependent meter registers where time was not monitored every 12 months. Potential impact: Low 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 as MTRX has the capability to identify this, but regular monitoring has not taken place. The impact on settlement and participants could be minor; therefore, the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
Intellihub has developed a specific report to identify meters which become subject to the timekeeping Requirements, with AMI Comms = N. Intellihub will, where appropriate, replace equipment to ensure reliable AMI communications Intellihub is in the process of developing a method to perform local time synchronization appropriate for each of our meter types, locations and available technicians.	Ongoing	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
As above	Ongoing	

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

MTRX

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

BOPE

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

IHUB

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

Audit commentary

MTRX

MTRX has a process for dealing with control devices which have been bridged out. When notification of bridging is received certification is cancelled and work orders are raised to remedy the bridged control device. MTRX provided a list of 50 bridged control devices, I examined a sample of 10 of these which confirmed that the certification had been cancelled for all 10, and nine of the 10 were recertified within 12 business days of cancellation. Notification is not required to be given to any other party because the request comes from the trader.

BOPE

BOPE has a process for dealing with control devices which have been bridged out. When notification of bridging is received certification is cancelled and work orders are raised to remedy the bridged control device. Notification is not required to be given to any other party because the request comes from the trader. There were no recent examples to review.

IHUB

IHUB has a process for dealing with control devices which have been bridged out. When notification of bridging is received certification is cancelled and work orders are raised to remedy the bridged control device. IHUB provided a list of six bridged control devices, I examined all six of these and confirmed that the certification had been cancelled for all six, and all six were recertified within 10 business days of cancellation. Notification is not required to be given to any other party because the request comes from the trader.

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

MTRX

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

BOPE

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

IHUB

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

Audit commentary

MTRX

MTRX has previously asked all relevant distributors for information on areas with signal propagation issues. Vector responded with some specific areas in the "United" region and MTRX is ensuring control devices are not installed in these areas. The other responses indicated that no issues were present.

BOPE

BOPE has not received any notification from ATHs in accordance with this clause.

IHUB

IHUB has not received notification in relation to this clause.

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

MTRX

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

BOPE

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

IHUB

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

Audit commentary

MTRX

No recertification by statistical sampling has taken place in the audit period.

BOPE

No recertification by statistical sampling has taken place in the audit period.

IHUB

No recertification by statistical sampling has taken place in the audit period.

Audit outcome

Compliant

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

Code reference

Clause 24(3) of Schedule 10.7

Code related audit information

If an external 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 update the compensation factor recorded in the registry in accordance with Part 11.

Audit observation

MTRX

I checked the records for 43 Category 2 and above metering installations to confirm that compensation factors were correct.

BOPE

I checked the records for 15 Category 2 and above metering installations to confirm that compensation factors were correct.

IHUB

I checked the certification records for 21 Category 2 metering installations to confirm compliance.

Audit commentary

MTRX

The compensation factors were correct for all 43 metering installations checked. The majority of MTRX meters are programmed with the current transformer multiplier, so compensation factors are recorded as “1” on the registry. MTRX does not have any installations with loss or error compensation factors.

BOPE

The compensation factors were correctly recorded on the registry for 13 of the 15 metering installations checked. There were two metering installations where the compensation factors were incorrectly recorded on the registry; details of the two metering installations are included in the following table:

ICP	Cat	Certification Date	CT Ratio	Compensation factor on certification report	Compensation factor recorded in registry
0009800085AL6B9	2	12 September 2022	200/5	40	100
1000607759PCC93	3	15 November 2022	800/5	160	100

Non-compliance is recorded for these two metering installations as BOPE has incorrectly recorded the compensation factors in the registry.

BOPE does not have any installations with loss or error compensation factors.

IHUB

The compensation factors were correct for all 21 metering installations checked. IHUB meters are programmed with the current transformer multiplier, so compensation factors are recorded as "1" on the registry. IHUB does not have any installations with loss or error compensation factors.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 7.14 With: 24(3) of Schedule 10.7 From: 12-Sep-22 To: 27-Apr-23	Compensation factors were incorrectly recorded on the registry for two BOPE ICPs. Potential impact: High Actual impact: Low Audit history: Once Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	I have recorded the controls as moderate as the process for checking certification reports did not identify the variance in compensation factor. The impact on settlement is still under investigation and it has not been determined if the incorrect compensation factor is being used. I have recorded the impact as low due to the short timeframe since certification; therefore, the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
Intellihub has investigated these errors on the Registry and is in discussion with the respective participants.	Ongoing	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	

As above	Ongoing	

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

MTRX

I checked the certification records for 86 metering installations to confirm compliance.

BOPE

I checked the certification records for 19 metering installations to confirm compliance.

IHUB

I checked the certification records for 50 metering installations to confirm compliance.

Audit commentary

MTRX

Meters were certified for all 86 metering installations.

BOPE

Meters were certified for all 19 metering installations.

IHUB

Meters were certified for all 50 metering installations.

Audit outcome

Compliant

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

Code reference

Clause 28(1) of Schedule 10.7

Code related audit information

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

Audit observation

MTRX

I checked the certification records for 12 Category 2 and above metering installations certified using the selected component method to confirm compliance.

BOPE

I checked the certification records for eight Category 2 and above metering installations certified using the selected component method to confirm compliance.

IHUB

I checked the certification records for nine Category 2 metering installations certified using the selected component method to confirm compliance.

Audit commentary

MTRX

Measuring transformers were certified for all 12 Category 2 and above metering installations certified using the selected component and fully calibrated methods.

BOPE

Measuring transformers were certified for all eight Category 2 and above metering installations certified using the selected component method.

IHUB

Measuring transformers were certified for all nine Category 2 metering installations certified using the selected component method.

Audit outcome

Compliant

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

Code reference

Clause 36(1) of Schedule 10.7

Code related audit information

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

Audit observation

MTRX

I checked the certification records for 82 metering installations containing data storage devices to confirm compliance.

BOPE

I checked the certification records for 18 metering installations containing data storage devices to confirm compliance.

IHUB

I checked the certification records for 49 metering installations containing data storage devices to confirm compliance.

Audit commentary

MTRX

Data storage devices were certified for all 82 metering installations.

BOPE

Data storage devices were certified for all 18 metering installations.

IHUB

Data storage devices were certified for all 49 metering installations.

Audit outcome

Compliant

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

Code reference

Clause 7 (3) Schedule 10.3

Code related audit information

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

Audit observation

MTRX

I checked the ATH register to confirm compliance.

BOPE

I checked the ATH register to confirm compliance.

IHUB

I checked the ATH register to confirm compliance.

Audit commentary

MTRX

All relevant ATHs have appropriate approval.

BOPE

All relevant ATHs have appropriate approval.

IHUB

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

MTRX

I checked the registry records to identify any ICPs with interim certification recorded.

BOPE

I checked the registry records to identify any ICPs with interim certification recorded.

IHUB

This clause is not relevant to Intellihub as they were not an MEP in 2015.

Audit commentary

MTRX

There are 330 previously interim certified installations with expired certification. This clause required the MEP to recertify each interim certified metering installation by 1 April 2015. Compliance is recorded in this section as Intellihub was not the MEP at that time. Non-compliance is recorded in **section 7.1** for the 330 ICPs.

BOPE

There are 21 previously interim certified installations with expired certification. This clause required the MEP to recertify each interim certified metering installation by 1 April 2015. Compliance is recorded in this section as Intellihub was not the MEP at that time. Non-compliance is recorded in **section 7.1** for the 21 ICPs.

IHUB

This clause is not relevant to Intellihub as they were not an MEP in 2015.

Audit outcome

Compliant

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 126 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, ensure an ATH has completed inspections of a sample of the category 1 metering installations selected under clause 45(2) of Schedule 10.7.*

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 2 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

MTRX

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

BOPE

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

IHUB

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

Audit commentary

MTRX

Intellihub conducted Category 1 inspections by sample in accordance with this clause for its MTRX, IHUB, BOPE and IHUB installations in 2022. I viewed the report which was sent to the Authority on 24th March 2023. The process and reporting of results is compliant.

BOPE

Intellihub conducted Category 1 inspections by sample in accordance with this clause for its MTRX, IHUB, BOPE and IHUB installations in 2022. I viewed the report which was sent to the Authority on 24th March 2023. The process and reporting of results is compliant.

IHUB

Intellihub conducted Category 1 inspections by sample in accordance with this clause for its MTRX, IHUB, BOPE and IHUB installations in 2022. I viewed the report which was sent to the Authority on 24th March 2023. The process and reporting of results is compliant.

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

MTRX

I checked the registry information to confirm which ICPs were due for inspection.

BOPE

I checked the registry information to confirm which ICPs were due for inspection.

IHUB

There were no inspections required during the audit period.

Audit commentary

MTRX

Two Category 2 metering installations were due for inspection during the audit period. Inspections were not conducted for either ICP within the applicable period. Certification has subsequently been cancelled for these metering installations. Timeliness of the cancellation of certification is discussed in **section 6.4**.

Details of the ICPs are included in the following table:

ICP	Category	Certification Date	Latest inspection date	Certification cancelled
0000004841ENECA	2	5 June 2012	5 December 2022	15 February 2023
0000100228EN78D	2	2 August 2012	2 February 2023	15 February 2023

BOPE

There was one Category 3 metering installation due for inspection during the audit period. The inspection was conducted as required.

IHUB

There were no inspections required during the audit period.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 8.2 With: 46(1) of Schedule 10.7 From: 05-Dec-22 To: 15-Feb-23	Two Category 2 metering installations not inspected within the maximum inspection period. Potential impact: Low Actual impact: Low Audit history: Once Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	I have recorded the controls as strong as Intellihub has a regime in place and only two inspections were not conducted within the maximum inspection period. It is unlikely that the missed inspections will impact on other participants and on settlement. The audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
Category 2 Inspections missed. This issue was proactively identified shortly after the recent change of ownership and MEP. Certification has been cancelled on the Registry.	15/02/2023	Cleared
Preventative actions taken to ensure no further issues will occur	Completion date	
As above	15/02/2023	

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

MTRX

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

BOPE

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

IHUB

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

Audit commentary

MTRX

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

BOPE

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

IHUB

IHUB 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) 3 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.

If the MEP is advised under 48(1B)(c) or (48(1F)(d) the MEP must update the relevant meter register content code for the relevant meter channel.

Audit observation

MTRX

I checked 31 examples of notification of missing seals, which were all as a result of inspection processes.

BOPE

I checked 31 examples of notification of missing seals, which were all as a result of inspection processes.

IHUB

I checked 31 examples of notification of missing seals, which were all as a result of inspection processes.

Audit commentary

MTRX

In all cases the installation was re-sealed following confirmation that the integrity of the installation was not compromised.

BOPE

In all cases the installation was re-sealed following confirmation that the integrity of the installation was not compromised.

IHUB

In all cases the installation was re-sealed following confirmation that the integrity of the installation was not compromised.

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) five business days for Category 3 or higher.

Audit observation

MTRX

I checked four examples where MTRX had become aware of faulty Category 1 metering installations and one example where MTRX became aware of a faulty Category 2 metering installation.

BOPE

I checked an example where BOPE had become aware of a faulty Category 1 metering installation.

IHUB

I checked the process for the management of faulty metering. There were no examples to examine.

Audit commentary

MTRX

In all four Category 1 examples the faulty meters were replaced, and the metering installations recertified within 10 business days of receiving notification.

MTRX became aware that the meter in the Category 2 metering installation at ICP 1002148658UN138 had been configured with an incorrect internal multiplier of x100 on 9th May 2022 when the ICP was first electrically connected. The installation has 1000/5 current transformers which require an internal multiplier of x200. The ATH was unable to return to site to reprogram the meter to the correct internal multiplier and certify the metering installation until 29th July 2022 due to problems gaining access. A statement of situation containing details of the incorrect internal multiplier and the impact on the raw meter data was provided to the MEP and trader on 5th August 2022. I have recorded non-compliance as MTRX did not provide a report on the situation within the required 10 business days.

BOPE

The faulty meter was replaced, and the metering installation recertified within three business days of receiving notification.

IHUB

The process for the management of faulty metering installations is compliant. The same process is used as for all Intellihub MEP codes.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 9.1 With: Clause 10.43(4) and (5) From: 01-Sep-19 To: 05-Nov-20	Report on defective Category 2 metering installation not provided to affected participant within 10 business days. Potential impact: Medium Actual impact: Low Audit history: Once Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as moderate because they mitigate risk most of the time but there is room for improvement. The impact on settlement and participants is minor; therefore, the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
Intellihub accepts that there were regrettable delays in this case. A statement of situation was provided to the affected Trader as soon as this issue was resolved in the field.	05/08/2022	Cleared
Preventative actions taken to ensure no further issues will occur	**Completion date**	
As above	05/08/2022	

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

MTRX

I checked four examples where MTRX had become aware of faulty Category 1 metering installations and one example where MTRX became aware of a faulty Category 2 metering installation.

BOPE

I checked an example where BOPE had become aware of a faulty Category 1 metering installation.

IHUB

I checked the process for the management of faulty metering. There were no examples to examine.

Audit commentary

MTRX

In all four Category 1 examples the faulty meters were replaced, and the metering installations recertified within 10 business days of receiving notification. The forms completed in the field by the ATHs contain sufficient information to report to relevant parties and meet the requirement for the provision of a statement of situation.

MTRX became aware that the meter in the Category 2 metering installation at ICP 1002148658UN138 had been configured with an incorrect internal multiplier of x100 on 9th May 2022 when the ICP was first electrically connected. The installation has 1000/5 current transformers which require an internal multiplier of x200. The ATH was unable to return to site to reprogram the meter to the correct internal multiplier and certify the metering installation until 29th July 2022 due to problems gaining access. A statement of situation containing details of the incorrect internal multiplier and the impact on the raw meter data was provided to the MEP and trader on 5th August 2022.

BOPE

The faulty meter was replaced, and the metering installation recertified within three business days of receiving notification. The forms completed in the field by the ATH contained sufficient information to report to relevant parties and meet the requirement for the provision of a statement of situation.

IHUB

The process for the management of faulty metering installations is compliant. The same process is used as for all Intellihub MEP codes.

Audit outcome

Compliant

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

Code reference

Clause10.46(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

MTRX

I checked four examples where MTRX had become aware of faulty Category 1 metering installations and one example where MTRX became aware of a faulty Category 2 metering installation.

BOPE

I checked an example where BOPE had become aware of a faulty Category 1 metering installation.

IHUB

I checked the process for the management of faulty metering. There were no examples to examine.

Audit commentary

MTRX

In all four Category 1 examples the faulty meters were replaced, and the metering installations recertified within 10 business days of receiving notification. The forms completed in the field by the ATHs contain sufficient information to report to relevant parties and meet the requirement for the provision of a statement of situation.

MTRX became aware that the meter in the Category 2 metering installation at ICP 1002148658UN138 had been configured with an incorrect internal multiplier of x100 on 9th May 2022 when the ICP was first electrically connected. The installation has 1000/5 current transformers which require an internal multiplier of x200. The ATH was unable to return to site to reprogram the meter to the correct internal multiplier and certify the metering installation until 29th July 2022 due to problems gaining access. A statement of situation containing details of the incorrect internal multiplier and the impact on the raw meter data was provided to the MEP and trader on 5th August 2022.

BOPE

The faulty meter was replaced, and the metering installation recertified within three business days of receiving notification. The forms completed in the field by the ATH contained sufficient information to report to relevant parties and meet the requirement for the provision of a statement of situation.

IHUB

The process for the management of faulty metering installations is compliant. The same process is used as for all Intellihub MEP codes.

Audit outcome

Compliant

9.4. Timeframe for correct defects and inaccuracies (Clause10.46A)

Code reference

Clause 10.46A

Code related audit information

When the metering equipment provider is advised under 10.43 or becomes aware a metering installation it is responsible for is inaccurate, defective or not fit for purpose the metering equipment provider must undertake remedial actions to address the issue.

The metering equipment provider must use its best endeavours to complete the remedial action within 10 business days of the date it is required to provide a report to participants under 10.43(4)(c).

Audit observation

MTRX

I checked four examples where MTRX had become aware of faulty Category 1 metering installations and one example where MTRX became aware of a faulty Category 2 metering installation.

BOPE

I checked an example where BOPE had become aware of a faulty Category 1 metering installation.

IHUB

I checked the process for the management of faulty metering. There were no examples to examine.

Audit commentary

MTRX

In all four Category 1 examples the faulty meters were replaced, and the metering installations recertified within 10 business days of receiving notification. In all four examples the recertification was completed within the required timeframe.

MTRX became aware that the meter in the Category 2 metering installation at ICP 1002148658UN138 had been configured with an incorrect internal multiplier of x100 on 9th May 2022 when the ICP was first electrically connected. The installation has 1000/5 current transformers which require an internal multiplier of x200. The ATH was unable to return to site to reprogram the meter to the correct internal multiplier and certify the metering installation until 29th July 2022 due to problems gaining access. A statement of situation containing details of the incorrect internal multiplier and the impact on the raw meter data was provided to the MEP and trader on 5th August 2022. I have recorded compliance as MTRX used its best endeavours to complete the remedial within the required timeframe but was unable to due to access issues.

BOPE

The faulty meter was replaced, and the metering installation recertified within three business days of receiving notification. The recertification was completed within the required timeframe.

IHUB

The process for the management of faulty metering installations is compliant. The same process is used as for all Intellihub MEP codes.

Audit outcome

Compliant

9.5. Meter bridging (Clause 10.33C)

Code reference

Clause 10.33(C)

Code related audit information

An MEP may only electrically connect an ICP in a way that bypasses a meter that is in place ("bridging") if the MEP has been authorised by the responsible trader.

The MEP can then only proceed with bridging the meter if, despite best endeavours:

- *the MEP is unable to remotely electrically connect the ICP,*
- *the MEP cannot repair a fault with the meter due to safety concerns,*
- *the consumer will likely be without electricity for a period which would cause significant disadvantage to the consumer.*

If the MEP bridges a meter, the MEP must notify the responsible trader within one business day and include the date of bridging in its advice.

Audit observation

MTRX

I checked for examples of bridged meters.

BOPE

I checked for examples of bridged meters.

IHUB

I checked for examples of bridged meters.

Audit commentary

MTRX

MTRX provided details of four examples where meters had been bridged. In all four examples the meters were bridged by the trader not the MEP. MTRX does not bridge meters as an MEP.

Clause 10.33C requires the MEP to reinstate the meter so that all electricity flowing into the ICP flows through a certified metering installation within five business days of receiving the notice.

I have recorded non-compliance as for three of the four ICPs MTRX did not reinstate the meter so that all electricity flowing into the ICPs flows through a certified metering installation within five business days of receiving the notice. Details of all four ICPs are included in the table below.

ICP	Date notified	Date meter unbridged	Business days to reinstate
1000010961BP662	22/02/2023	31/03/2023	27
0000186406UNDE1	3/02/2023	1/05/2023	57
0000207134UNDA8	19/12/2022	11/04/2023	75
0433348046LC1FE	28/02/2023	2/03/2023	2

BOPE

BOPE provided details of two examples where a meter had been bridged. The meter was bridged by the trader not the MEP. BOPE does not bridge meters as an MEP.

Clause 10.33C requires the MEP to reinstate the meter so that all electricity flowing into the ICP flows through a certified metering installation within five business days of receiving the notice.

I have recorded non-compliance as for both ICPs BOPE did not reinstate the meter so that all electricity flowing into the ICPs flows through a certified metering installation within five business days of receiving the notice. Details of the two ICPs are included in the table below.

ICP	Date notified	Date meter unbridged	Business days to reinstate
1000010130BP222	29/12/2022	13/03/2023	50
0001921180PC107	28/04/2022	1/05/2023	252

IHUB

IHUB provided details of five examples where meters had been bridged. In all five examples the meters were bridged by the trader not the MEP. IHUB does not bridge meters as an MEP.

Clause 10.33C requires the MEP to reinstate the meter so that all electricity flowing into the ICP flows through a certified metering installation within five business days of receiving the notice.

I have recorded non-compliance as for all five ICPs IHUB did not reinstate the meter so that all electricity flowing into the ICPs flows through a certified metering installation within five business days of receiving the notice. Details of all five ICPs are included in the table below.

ICP	Date notified	Date meter unbridged	Business days to reinstate
1000541854PCE26	22/02/2023	6/04/2023	31
0000043252UN519	25/01/2023	7/03/2023	28
0000376519TUE39	18/11/2022	22/03/2023	84
1001120040UNB14	8/02/2023	22/03/2023	30
0000194063TR226	17/11/2022	13/03/2023	78

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 9.5 With: Clause 10.33C From: 01-Dec-22 To: 01-May-23	Meters not reinstated after bridging within five business days of bridging for 10 Category 1 ICPs. Potential impact: Low 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 as there is room for improvement. The impact on settlement and participants is minor based on the number of ICPs affected; therefore, the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
The cause for delays in the remediation of bridged meters has been identified and the issue has been resolved.	11/05/2023	Cleared
Preventative actions taken to ensure no further issues will occur	**Completion date**	
As above	11/05/2023	

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

MTRX

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

BOPE

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

IHUB

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

Audit commentary

MTRX

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

BOPE

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

IHUB

No requests have been received but IHUB 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

MTRX

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

BOPE

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

IHUB

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

Audit commentary

MTRX

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

BOPE

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

IHUB

No requests have been received but IHUB 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

MTRX

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

BOPE

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

IHUB

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

Audit commentary

MTRX

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

BOPE

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

IHUB

No requests have been received but IHUB 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

MTRX

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

BOPE

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

IHUB

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

Audit commentary

MTRX

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

BOPE

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

IHUB

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

Audit outcome

Compliant

10.5. Electronic Interrogation of Metering Installations (Clause 8(2), 8(3), 8(5) and 8(6) of Schedule 10.6)

Code reference

Clause 8(2), 8(3), 8(5) and 8(6) 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.

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 an events that may affect the integrity or operation of the metering installation, such as malfunctioning or tampering.

The MEP must investigate and remediate any events and advise the reconciliation participant.

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

MTRX

Interrogation cycle

I conducted a walk-through of the process, and I checked reporting of meters not read during the maximum interrogation cycle.

Clock synchronisation

Clock synchronisation is discussed in **section 10.7**.

Event logs

Event logs are discussed in **section 10.8**.

Security of raw meter data

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

BOPE

Interrogation cycle

I conducted a walk-through of the process, and I checked reporting of meters not read during the maximum interrogation cycle.

Clock synchronisation

Clock synchronisation is discussed in **section 10.7**.

Event logs

Event logs are discussed in **section 10.8**.

Security of raw meter data

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

IHUB

Interrogation cycle

I conducted a walk-through of the process, and I checked reporting of meters not read during the maximum interrogation cycle.

Clock synchronisation

Clock synchronisation is discussed in **section 10.7**.

Event logs

Event logs are discussed in **section 10.8**.

Security of raw meter data

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

Audit commentary

MTRX

Interrogation cycle

A daily report is run by MTRX to identify any meters that have not communicated for the earliest of 30 days or 25% of the maximum interrogation cycle. All meters identified have the AMI Comm flag to "N" on the registry. This is backed up by a second report run weekly which will identify meters that have not communicated within 60% of the maximum interrogation cycle. I checked reporting provided by MTRX which confirmed that all meters with an AMI flag of "Y" were interrogated within the maximum interrogation cycle.

Security of raw meter data

All users have login and password to access working data and only certain IT experts can access raw data. There are no business processes that allow data to be edited. Event data is archived along with consumption data. This part of the process is compliant.

Event logs and clock synchronisation processes are discussed in **sections 10.7** and **10.8**.

BOPE

Interrogation cycle

A daily report compares the last read date to the AMI Comm flag in the registry. Any meters identified as not being read for 10 or more days with an AMI Comm flag of "Y" are changed to AMI "N". The maximum interrogation cycle for all BOPE meters is 90 days. I checked reporting provided by BOPE which confirmed that all meters with an AMI flag of "Y" were interrogated within the maximum interrogation cycle.

Security of raw meter data

Data is stored indefinitely and is transmitted securely by SFTP and is only accessible to authorised persons with appropriate passwords.

Event logs and clock synchronisation processes are discussed in **sections 10.7** and **10.8**.

IHUB

Interrogation cycle

A daily report is run by IHUB to identify any meters that have not communicated for the earliest of 30 days or 25% of the maximum interrogation cycle. All meters identified have the AMI Comm flag to "N" on the registry. This is backed up by a second report run weekly which will identify meters that have not communicated within 60% of the maximum interrogation cycle. I checked reporting provided by IHUB which confirmed that all meters with an AMI flag of "Y" were interrogated within the maximum interrogation cycle.

Security of raw meter data

All users have login and password to access working data and only certain IT experts can access raw data. There are no business processes that allow data to be edited. Event data is archived along with consumption data. This part of the process is compliant.

Event logs and clock synchronisation processes are discussed in **sections 10.7** and **10.8**.

Audit outcome

Compliant

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

MTRX

I conducted a walkthrough of the data security processes.

BOPE

I conducted a walkthrough of the data security processes.

IHUB

I conducted a walkthrough of the data security processes.

Audit commentary

MTRX

Data is transmitted securely by SFTP and is only accessible to authorised persons with appropriate passwords.

BOPE

Data is transmitted securely by SFTP and is only accessible to authorised persons with appropriate passwords.

IHUB

Data is transmitted securely by SFTP and is only accessible to authorised persons with appropriate passwords.

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

MTRX

I checked the time synchronisation processes and reporting for all head ends.

BOPE

I checked the time synchronisation processes and reporting.

IHUB

I checked the time synchronisation processes and reporting.

Audit commentary

MTRX

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. The relevant part of this table is shown below:

Metering Installation Category	HHR Metering Installations (seconds)	NHH Metering Installations (seconds)
1	±30	±60
2	±10	±60

Intellihub has four different systems. Time synchronisation occurs as follows:

1. Multidrive. The clock setting is five seconds to 30 seconds for Category 1 and five seconds to ten seconds for Category 2. All errors in these bands are adjusted automatically and those over the maximum setting are adjusted manually. This task is conducted daily. If the manual adjustment fails due to a communications issue, then a field visit is booked to fix the issue and synchronise the clock. There is a "repeat offenders" list of installations where the clock has drifted outside the threshold every interrogation. These devices are replaced.

2. Command Centre. The clock setting is ten seconds, so any error less than ten seconds is adjusted automatically and those over ten seconds are adjusted manually. A separate "time synchronisation" report is run on a weekly basis to manage clock errors. Repeat offenders are also monitored and managed.

3. Connexo. This is an RF mesh system, which has "Gatekeepers" and "meters". Gatekeepers are synchronised during every communication with Connexo, this typically occurs hundreds of times each day. The Gatekeeper time sync setting is five to 30 seconds. Any large time errors over 30 seconds are managed manually.

4. Silverspring. The clock setting is ten seconds to 20 minutes. For errors over 20 minutes a user must manually set the time.

Intellihub advises affected reconciliation participants of time error adjustments or any potential effect on raw meter data. Intellihub monitors devices with multiple clock errors to ensure the meters are replaced.

This clause is slightly different to the clause in Part 15 for reconciliation participants. This clause requires MEPs to ensure the time is not outside the allowable thresholds, therefore non-compliance exists for those examples where time has drifted outside the allowable threshold.

I checked the most recent daily time synchronisation reports for each head end, and they contained a total of 41 Category 1 and six Category 2 meters that had exceeded the thresholds.

BOPE

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. The relevant part of this table is shown below:

Metering Installation Category	HHR Metering Installations (seconds)	NHH Metering Installations (seconds)
1	±30	±60
2	±10	±60

BOPE meters are interrogated by the "Storm" Head-end. The clock synchronisation setting is 10 seconds. Any clock errors less than 10 seconds are adjusted automatically. Any errors outside these times are also adjusted automatically and reporting is provided to retailers as required by the Code. I checked the latest daily clock synchronisation reports and found one example of a Category 1 meter with an error greater than 30 seconds.

IHUB

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. The relevant part of this table is shown below:

Metering Installation Category	HHR Metering Installations (seconds)	NHH Metering Installations (seconds)
1	±30	±60
2	±10	±60

The Intellihub clock synchronisation setting is 5 seconds to 10 seconds. Any clock errors between these times are adjusted automatically. Any errors outside these times are adjusted by a separate schedule. Clock errors over 30 seconds are reported to retailers. I examined examples of emails sent to each retailer to confirm this.

I checked the latest daily clock synchronisation reports and found one example of a Category 1 meter with an error greater than 30 seconds.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 10.7 With: Clause 8(4) of Schedule 10.6 From: 01-Mar-22 To: 23-Mar-23	49 examples of clock errors outside the allowable thresholds in the most recent daily reporting. 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 because clocks are synchronised during every successful interrogation. The impact is considered minor because most clock errors are small and are corrected within one half hour. The audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
There are no further preventative actions identified that Intellihub can reasonably implement.	Ongoing	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
As above	Ongoing	

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

MTRX

I checked the interrogation logs and event logs to ensure the items above were managed in a compliant manner.

BOPE

I checked the interrogation logs and event logs to ensure the items above were managed in a compliant manner.

IHUB

I checked the interrogation logs and event logs to ensure the items above were managed in a compliant manner.

Audit commentary

MTRX

The interrogation logs contain all of the information above. I checked all head ends to confirm this.

MTRX downloads the event log as required by this clause. All critical events are evaluated, and appropriate action is taken. Relevant events are sent to reconciliation participants, including:

- tampering when related to other events and no coinciding field work has taken place,
- memory failure,
- battery,
- temperature,
- reverse power with no export, and
- VT failure.

I checked examples of the event reporting sent to reconciliation participants, the report includes a "Job Notes" field which provides advice on the cause and follow -up actions required for each event. In cases where MTRX acts as an agent to other MEPs, those MEPs are required to investigate and manage event information, MTRX does not conduct this activity for them.

BOPE

BOPE provided copies of event reports provided to retailers and the results of their review of the events. Events are reviewed daily, and jobs are created for field work to address relevant events. The relevant events include the following:

- tamper,
- reverse power (indicating generation where generation is not expected),
- time changes, and
- phase failure.

I checked examples of the event reporting sent to reconciliation participants, the report includes a "Job Notes" field which provides advice on the cause and follow-up actions required for each event.

IHUB

IHUB downloads the event log as required by this clause. All critical events are evaluated, and appropriate action is taken. Relevant events are sent to reconciliation participants. The relevant events can be summarised as follows:

- tamper (initially filtered by Intellihub to remove false records),
- phase failure,
- memory failure,
- temperature alarm,
- reverse power (detecting unexpected generation flow),

- load side voltage detection (to detect bridging of remotely disconnected devices),
- clock synchronisation,
- time synchronisation failure (because outside the threshold),
- re-programming, and
- manual download.

I checked examples of the event reporting sent to reconciliation participants, the report includes a "Job Notes" field which provides advice on the cause and follow-up actions required for each event.

Audit outcome

Compliant

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 for the same period.

Audit observation

MTRX

The sum-check process was examined along with the business rules and associated reporting.

BOPE

The sum-check process was examined along with the business rules and associated reporting.

IHUB

The sum-check process was examined along with the business rules and associated reporting.

Audit commentary

MTRX

As recorded in **section 1.1** an exemption came into force on 4th May 2021 and expires on 31 May 2023. Intellihub NZ Limited ("Intellihub") is exempted from complying with the obligation in clause 8(9) in Schedule 10.6 of the Electricity Industry Participation Code 2010 to ensure that each electronic interrogation of the metering installation that retrieves half hour raw meter data compares the sum of that data against the increment of the metering installation's accumulating meter registers for the same period for some of their meter types. The meter types have been redacted from the gazette notice. MTRX applies the same process to all meter types but has applied a higher threshold of 2 kWh for these meter types. My observations in this section apply to all meter types and have taken into account the higher threshold for the specified meter types.

MTRX advised that prior to the expiry of the exemption all meter types will become subject to the 1kWh threshold, and the exemption will no longer be required.

The MTRX process ensures that sum-check failures are investigated and resolved within three business days or certification is cancelled. MTRX provided a report detailing all sum-check failures which occurred dating back to 1st June 2021. The report identified 1,506 meters. I checked a sample of 15 meters and confirmed that certification had been cancelled for all 15 metering installations. Non-compliance is

recorded in **section 6.4** as the registry was not updated with the cancellation within 10 business days for five of the 15 examples.

BOPE

Sum-check validation occurs with each interrogation and is based on midnight-to-midnight NZST. The "fail" setting is a maximum of 0.70% with a maximum absolute setting of 0.004 kWh and all trading periods must be present for a pass to occur. Any failures are investigated to determine the cause, in most cases the failures are data issues such as missing intervals due to comms problems which are resolved during subsequent validations.

The BOPE process ensures that sum-check failures are investigated and resolved within three business days or certification is cancelled within 10 business days. BOPE provided a report detailing all sum-check failures which occurred during the audit period. The report identified two meters, certification had been cancelled for both and the registry was updated within 10 business days.

IHUB

Sum-check validation occurs daily and is based on midnight-to-midnight NZST. The "fail" setting is 1 kWh, and all trading periods must be present for a pass to occur. A report is generated which identifies failures which are unable to be resolved within three business days. This reporting is used to update the registry with cancellation of certification. The reporting identified 354 ICPs, I checked a sample of 15 meters and confirmed that certification had been cancelled for all 15 metering installations. Non-compliance is recorded in **section 6.4** as the registry was not updated with the cancellation within 10 business days for five of the 15 examples.

Audit outcome

Compliant

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

MTRX

MTRX has a process in place to achieve compliance with this requirement. No specific examples were available to examine.

BOPE

BOPE has a process in place to achieve compliance with this requirement. No specific examples were available to examine.

IHUB

IHUB has a process in place to achieve compliance with this requirement. No specific examples were available to examine.

Audit commentary

MTRX

MTRX has a process in place to achieve compliance with this requirement. No specific examples were available to examine.

BOPE

BOPE has a process in place to achieve compliance with this requirement. No specific examples were available to examine.

IHUB

IHUB has a process in place to achieve compliance with this requirement. No specific examples were available to examine.

Audit outcome

Compliant

10.11. Raw meter data and compensation factors (Clause 8(10) of Schedule 10.6)

Code reference

Clause 8(10) of Schedule 10.6

Code related audit information

The MEP must not apply the compensation factor recorded in the registry to raw meter data downloaded as part of the interrogation of the metering installation.

Audit observation

MTRX

I checked whether MTRX was applying compensation factors to raw meter data.

BOPE

I checked whether BOPE was applying compensation factors to raw meter data.

IHUB

I checked whether IHUB was applying compensation factors to raw meter data.

Audit commentary

MTRX

MTRX is not applying compensation factors to raw meter data.

BOPE

Intellihub provided details of a self-breach and the associated closure letter from the Electricity Authority dated 2nd March 2023. The breach related to 20 ICPs under the BOPE MEP identifier where Intellihub became aware that an external compensation factor was being applied to the raw meter data file prior to delivery to the retailer. The Authority noted the breach caused a slight market impact with customers likely being under billed by the concerned retailer. It was agreed that the Intellihub ATH would visit each ICP to verify the compensation factor. The meter will be either reprogrammed or replaced to ensure the compensation factor is applied at the meter. The Authority requires Intellihub to provide monthly updates on its progress, at the time of the audit seven meters had been replaced and jobs were issued for the remainder.

IHUB

IHUB is not applying compensation factors to raw meter data.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 10.11 With: Clause 8(10) of Schedule 10.6 From: Unknown To: 27-Apr-23	Compensation factor applied to raw meter data for 20 BOPE ICPs. Potential impact: Low Actual impact: Low Audit history: None Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as strong as a plan has been put in place to remedy this situation. The impact is assessed to be low, as there has been a minimal impact on settlement.

Actions taken to resolve the issue	Completion date	Remedial action status
Remedial action is in progress. Regular updates are being provided to the Electricity Authority.	31/12/2023	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
As above	31/12/2023	

10.12. Investigation of AMI interrogation failures (Clause 8(11), 8(12) and 8(13) of Schedule 10.6)

Code reference

Clause 8(11), 8(12) and 8(13) of Schedule 10.6

Code related audit information

If an interrogation does not download all raw meter data, the MEP must investigate the registry why or update the registry to show the meter is no longer AMI.

If the MEP choses to investigate the reasons for the failure the MEP has no more than 30 days or 25% of the maximum interrogation cycle, from the date of the last successful interrogation (whichever is shorter).

If the MEP does not restore communications within this time or determines they will be unable to meet this timeframe they must update the registry to show the meter is no longer AMI.

Audit observation

MTRX

I checked the process for ensuring the AMI flag is changed where data is incomplete.

BOPE

I checked the process for ensuring the AMI flag is changed where data is incomplete.

IHUB

I checked the process for ensuring the AMI flag is changed where data is incomplete.

Audit commentary

MTRX

A “missing data export” report identifies meters where there are gaps in either the interval or register data. These are followed up to attempt to retrieve the missing data from the meter or update the AMI flag to “N” on the registry or certification is cancelled and a recertification job is created.

BOPE

A daily report compares the last read date to the AMI Comm flag in the registry. Any meters identified as not being read for 10 or more days with an AMI Comm flag of “Y” are changed to AMI “N”.

IHUB

A “missing data export” report identifies meters where there are gaps in either the interval or register data. These are followed up to attempt to retrieve the missing data from the meter or update the AMI flag to “N” on the registry or certification is cancelled and a recertification job is created. I checked reporting provided by IHUB which confirmed that all meters with an AMI flag of “Y” were interrogated within the maximum interrogation cycle.

Audit outcome

Compliant

CONCLUSION

This is the first audit of Intellihub encompassing all ICPs under the MTRX, BOPE and IHUB MEP identifiers. All ICPs with the IHUB identifier were transferred to Intellihub Limited on 1st May 2022. Intellihub also took over responsibility for a number of ICPs with expired or cancelled certification during the audit period. Planning is underway to recertify these ICPs.

Sixteen non-compliances were identified.

Intellihub has regularly met with the ATHs to work on improving the quality of information recorded in certification reports. The number of errors found in certification reports from ATHs has decreased significantly since the last audit.

The other main areas of non-compliance related to following issues:

- late updating of registry information,
- inaccurate registry information,
- discrepancy reporting not run since 1st October 2021 for BOPE ICPs,
- expired and cancelled certification,
- time was not monitored every 12 months for 137 ICPs with time dependent registers,
- incorrect compensation factor recorded for two ICPs,
- meters not reinstated after bridging within five business days of bridging for 10 Category 1 ICPs, and
- missed inspection for two metering installations.

The date of the next audit is determined by the Electricity Authority and is dependent on the level of compliance during this audit. The Future Risk Rating provides some guidance on this matter and recommends an audit frequency of three months. After considering Intellihub's responses to the areas of non-compliance I recommend an audit frequency of 12 months.

PARTICIPANT RESPONSE

Over the past 12 months, Intellihub has continued with its expansion plans and has increased its footprint into new Network areas.
Intellihub will continue to work closely with its service providers to focus on areas where compliance opportunities have been identified, with a focus on continuous improvement.
There is one area of the February 2021 Code changes where Intellihub has concerns that the Code was not implemented in line with the “Decision Document” published in December 2020, as follows:
Intellihub interpretation of Line 2 of Table 3 in Part 10 is that a Prevailing Load Test should not be required when a meter is not being changed, and the installation certification expiry date remains unchanged.
Our understanding is that this view is also shared by the majority of MEP’s and ATH’s.
Intellihub formally sought clarification from the Authority on this matter, soon after the Code changes came into effect on 01/02/2021. In the interim, Intellihub is ensuring that all other metering installation commissioning tests and checks are completed including the raw meter data output test to confirm overall installation accuracy.

Over the past 18 months, Intellihub has continued with its successful monthly Technical Compliance sessions with contracted Approved Test Houses Wells and Delta with the objectives of improving communication, alignment and ensuring we both meet Code Compliance. We have already seen good value out of these meetings, these will remain ongoing as avenues to discuss any Code or Technical issues as they arise.