

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

For

**ELECTRICITY INVERCARGILL/THE POWER  
COMPANY  
(MANAGED BY POWERNET)**

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Date audit commenced: 7 June 2022

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Audit report due date: 20-Jun-22

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## EXECUTIVE SUMMARY

This participant audit was performed at the request of PowerNet to encompass the Authority's request for an audit, as required by clause 16A.17(a) of the Electricity Industry Participation Code 2010. PowerNet is a management company which manages the MEP functions on behalf of The Power Company (TPCO) and Electricity Invercargill (ELIN). The company provides the MEP services for metering installations of category 1 and 2 only.

The relevant clauses were audited as required by the Guidelines for Metering Equipment Provider v.2.0 issued by the Electricity Authority.

The number of ICPs for which TPCO/ELIN provides MEP services is steadily decreasing. Since the last audit the number of ICPs for TPCO reduced from 4,418 to 1,567 and for ELIN from 1,945 to 672.

The PowerNet MEP staff have made considerable efforts to successfully address the non-compliances from the last audit. This was especially significant considering the challenging circumstances that had to be overcome during the audit period such as Covid 19 lockdowns and associated restricted working conditions, and a significant operation restructuring due to some personnel retiring or relocating. to North Island.

This audit for both ELIN and TPCO identified 8 non compliances and one recommendation was made. The main issues identified during the audit related to:

- 1,295 category 1 metering installations with expired certification. PowerNet has undertaken a statistical sampling project to remedy this.
- 12 category 2 metering installations with expired certification, some of them were noted in the previous audit period
- Certification information for 512 Metec Q meters is not available. It is a historic non-compliance. 479 Metec Q meters were replaced by smart meters during this audit period

It was noted that the backdating of registry information updates with the consequence of non-compliance is still a problem.

Based on Table 1 of the Guidelines for Reconciliation Participant audit, the next audit should happen within the next 12 months. We agree with the result.

We thank PowerNet staff for their full and complete cooperation in this audit.

The audit period was 1 December 2020 to 30 April 2022.

## AUDIT SUMMARY

### NON-COMPLIANCES

#### Electricity Invercargill (ELIN)

Subject	Section	Clause	Non Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Participants to Provide Accurate Information	2.5	11.2 and Clause 10.6	Information for a small number of ICPs is missing or not up to date.	Moderate	Low	2	Identified
Changes to Registry Records	4.10	3 of Schedule 11.4	Registry metering information updated later than 10 business days	Strong	Low	1	Identified
Accurate and Complete Records	5.1	4(1)(a)(b) of Schedule 10.6 & Table 1 of Schedule 11.4	Certification information missing for 512 Metec Q meters	Moderate	Low	2	Identified
Provision of Registry Information	6.2	7(1)(2)(3) of Schedule 11.4	7 LCD records not populated in registry	Strong	Low	1	Identified
Certification and Maintenance	7.1	10.38(a) clause 1, clause 15 of Schedule 10.7	378 ICPs with expired certification	Weak	Low	3	Identified
Metering Installations Incorporating a meter	7.15	26(1) of Schedule 10.7	378 ICPs with meters have expired certification.	Weak	Low	3	Identified
Metering Installations Incorporating a measuring transformer	7.16	28(1) of Schedule 10.7	9 cat 2 CT installations have expired certification.	Moderate	Low	2	Identified
Category 2 to 5 Inspections	8.2	46(1) of Schedule 10.7	9 cat 2 installations were not inspected within the required timeframe	Moderate	Low	2	Identified
Future Risk Rating						16	

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	Description	Recommendation

## ISSUES

Subject	Section	Description	Issue
			Nil

## The Power Company (TPCO)

Subject	Section	Clause	Non Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Participants to Provide Accurate Information	2.5	11.2 and Clause 10.6	Information for a small number of ICPs is missing or not up to date.	Moderate	Low	2	Identified
Changes to Registry Records	4.10	3 of Schedule 11.4	Registry metering information updated later than 10 business days	Strong	Low	1	Identified
Provision of Registry Information	6.2	7(1)(2)(3) of Schedule 11.4	41 LCD records not populated in registry	Moderate	Low	2	Identified
Certification and Maintenance	7.1	10.38(a) clause 1, clause 15 10.7	920 ICPs with expired certification	Weak	Low	3	Identified
Metering Installations Incorporating a meter	7.15	26(1) of Schedule 10.7	920 ICPs with meters expired certification	Weak	Low	3	Identified

Metering Installations Incorporating a measuring transformer	7.16	28(1) of Schedule 10.7	3 cat 2 CT installations have expired certification	Moderate	Low	2	Identified
Interim Certification	7.19	18 Schedule 10.7	54 TPCO ICPs with expired interim certification	Strong	Low	1	Identified
Category 2 to 5 Inspections	8.2	46(1) Schedule 10.7	3 cat 2 installations were not inspected within the required timeframe	Moderate	Low	2	Identified
Future Risk Rating						17	

Subject	Section	Description	Recommendation
Design Reports for Metering Installations	4.1	A number of anomalies were observed in the Approved Test House (ATH) installation/certification reports that could potentially lead to some misunderstanding.	PowerNet discuss and resolve the anomalies identified with their contracted ATHs

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



## 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.*

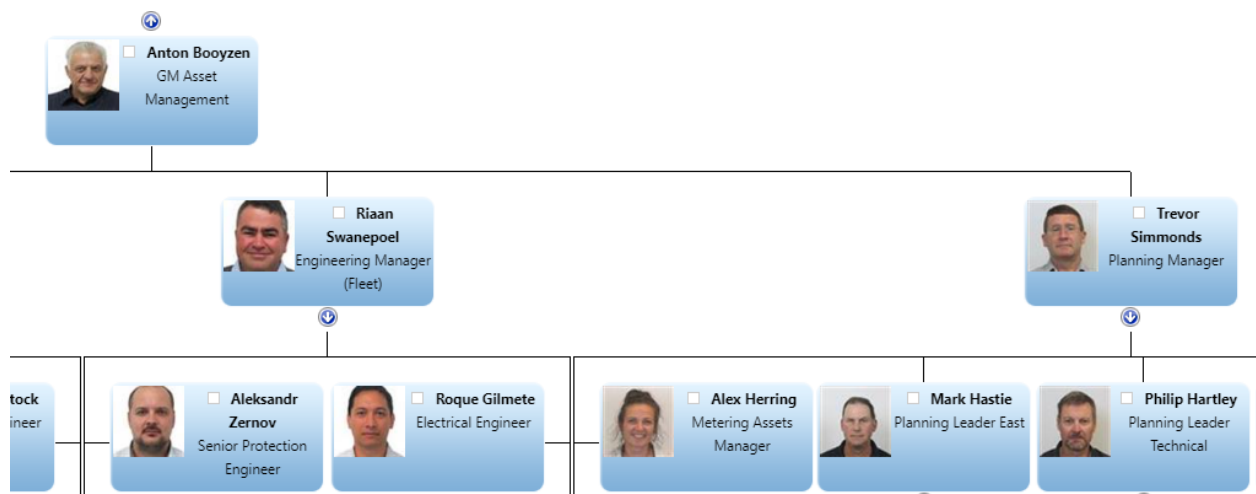
#### Audit observation

TPCO/ELIN do not have any exemptions granted to exempt them from compliance with all or any of the clauses.

#### Audit commentary

TPCO/ELIN did not apply for any exemptions. We checked the Electricity Authority website and confirm that there are no exemptions in place.

### 1.2. Structure of Organisation



### 1.3. Persons involved in this audit

Name	Title	Company
Alex Herring	Metering Assets Manager	PowerNet
Trevor Simmonds	Planning Manager	PowerNet
Ewa Glowacka	Electricity Authority Approved Auditor	TEG & Associates Ltd

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

#### Audit observation

PowerNet on behalf of TPCO/ELIN does not use agents for the functions covered by this audit.

#### Audit commentary

All functions covered in this audit are performed in-house by PowerNet staff, or by their database developer Ace Computer Consultants.

### 1.5. Hardware and Software

The key infrastructure required for the audited processes comprises of the Metering Database. The software is constantly updated to add monitoring functionality.

### 1.6. Breaches or Breach Allegations

We can confirm that there were no breaches related to areas covered since the last audit.

### 1.7. ICP Data

#### ELIN

Metering Category	Number of ICPs (2022)	Number of ICPs (Nov 2020)	Number of ICPs (Feb 2020)	Number of ICPs (2019)	Number of ICPs (2018)
1	647	1,882	3,013	6,267	8,073
2	25	63	122	126	135
3	0	0	0	0	0
4	0	0	0	0	0
5	0	0	0	0	0

#### TPCO

<b>Metering Category</b>	<b>Number of ICPs (2022)</b>	<b>Number of ICPs (Nov 2020)</b>	<b>Number of ICPs (Feb 2020)</b>	<b>Number of ICPs (2019)</b>	<b>Number of ICPs (2018)</b>
1	1,545	4,366	7,702	12,834	16,960
2	22	52	94	90	99
3	0	0	0	0	0
4	0	0	0	0	0
5	0	0	0	0	0

### 1.8. Authorisation Received

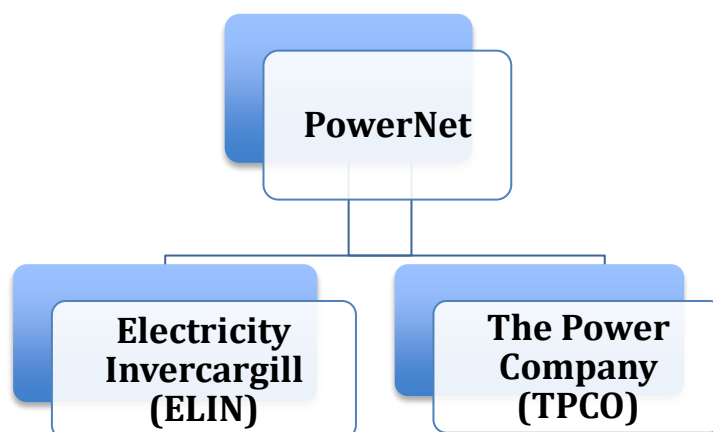
PowerNet provided a letter of authorisation to TEG & Associates permitting the collection of data from other parties for matters directly related to the audit.

### 1.9. Scope of Audit

This participant audit was performed at the request of PowerNet to encompass the Authority's request for an audit as required by clause 16A.17(a) of the Electricity Industry Participation Code 2010. PowerNet Limited is a joint venture company that manages the metering equipment provider functionality on behalf of Electricity Invercargill and The Power Company.

The company uses the same processes and software to deliver the MEP service for both MEPs therefore this report will cover the analysis of compliance for both Electricity Invercargill and The Power Company. If any differences are identified during this audit in relation to compliance with the Code, it will be highlighted.

In the body of this report the name PowerNet will be used to represent ELIN and TPCO equally. Where the names ELIN and TPCO are used they will refer singularly.



The audit was carried out on the 7 & 9 June 2022 via video call.

The audit covered the following functions:

- Process for changing a MEP
- Installation and modification of metering installations
- Metering records
- Maintenance of registry information

- Certification of metering installations
- Inspection of metering installations
- Process of handling faulty metering installations
- Access to and provision of raw meter data and metering installations

The Audit findings were obtained by observation, discussion with PowerNet staff, a review of systems, processes and records and analysis of information provided by PowerNet and the registry.

#### 1.10. Summary of previous audit

The previous audit was conducted on December 2020 by Allan Borcoski. The following non-compliances were identified.

##### ELIN

Subject	Section	Clause	Non Compliance	Comment
Participants to Provide Accurate Information	2.5	11.2 and Clause 10.6	Information for a small number of ICPs is missing or not up to date.	Still exists
Changes to Registry Records	4.10	3 of Schedule 11.4	Registry metering information updated later than 10 business days	Still exists
Accurate and Complete Records	5.1	4(1)(a)(b) 10.6 Table 1 11.4	Certification information missing for 991 Metec Q meters	Still exists
Provision of Registry Information	6.2	7(1)(2)(3) 11.4	11 x LCD records not populated in registry	Still exists
Certification and Maintenance	7.1	10.38(a) clause 1, clause 15 10.7	10 x cat 2 ICPs with expired certification.	Still exists
Metering Installations Incorporating a meter	7.15	26(1) 10.7	10 x cat 2 meters have expired certification.	Still exists
Metering Installations Incorporating a measuring transformer	7.16	28(1) 10.7	10x cat 2 CT installations have expired certification.	Still exists
Category 2 to 5 Inspections	8.2	Cl 46(1) 10.7	10 x cat 2 installations were not inspected within the required timeframe.	Still exists

## TPCO

Subject	Section	Clause	Non Compliance	Comment
Participants to Provide Accurate Information	2.5	Clause 11.2 and Clause 10.6	Information for a small number of ICPs is missing or not up to date.	Still exists
Changes to Registry Records	4.10	Clause 3 of Schedule 11.4	Registry metering information updated later than 10 business days	Still exists
Provision of Registry Information	6.2	Cl 7(1)(2)(3) 11.4	118 x LCD records not populated in registry	Still exists
Certification and Maintenance	7.1	Cl 10.38(a) clause 1, clause 15 10.7	91 x cat 1 ICPs and 4 x cat 2 ICPs with expired certification.	Still exists
Metering Installations Incorporating a meter	7.15	Cl26(1) 10.7	4 x cat 2 meters have expired certification.	Still exists
Metering Installations Incorporating a measuring transformer	7.16	Cl 28(1) 10.7	4 x cat 2 CT installations have expired certification.	Still exists
Interim Certification	7.19	Cl 18 10.7	203 TPCO ICPs with expired interim certification	Still exists
Category 2 to 5 Inspections	8.2	Cl 46(1) 10.7	4 x cat 2 installations were not inspected within the required timeframe.	Still exists

## 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

This was discussed with PowerNet Staff.

#### Audit commentary

ELIN and TPCO are MEP for both “vanilla” and smart meters, however neither MEP offers meter reading or data services. The meters are read manually by meter readers appointed by traders. A meter reader visits the site and visually reads the meter’s register and records the data then passes it to traders.

A meter register display is considered to be the service access interface. Any issues with the service access interface reported during inspections or reported by traders is attended to promptly. The standard remedy is to upgrade the metering and transition it to SmartCo MEP (SMCO).

Since 2017 smart meters being installed by ELIN and TPCO include a communication module to connect with PowerNet communications mesh system but they are also read manually because PowerNet has no headend infrastructure to facilitate remote access. The meters subsequently transition to SmartCo where they become fully functioning smart meters.

#### Audit outcome

Compliant

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

#### Code reference

*Clause 10.50(1) to (3)*

#### Code related audit information

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

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

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

#### Audit observation

This was discussed with PowerNet Staff

#### Audit commentary

There have been no disputes related to metering that have not been able to be resolved. No disputes have been referred to the Electricity Authority during this audit period.

As a MEP, PowerNet uses the same disputes resolution procedure that is in place for its distributor function.

#### 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

The LIS file dated 18/05/2022 was checked and this was discussed with PowerNet Staff.

#### Audit commentary

The LIS file confirmed that the 4-letter code of ELIN is used for Electricity Invercargill and TPCO for The Power Company.

#### 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

The LIS file confirmed that the 4-letter code of ELIN is used for Electricity Invercargill and TPCO for The Power Company. Several TOU certification documents were checked and this was also discussed with PowerNet Staff

#### Audit commentary

PowerNet does not operate headend infrastructure to support remote access to the smart meters provided by ELIN and TPC therefore all meters are manually read by retailer managed meter readers.

Smart meters installed by PowerNet since 2017 have had communications modules fitted to connect to the PowerNet radio mesh communications system however neither MEP offers meter reading or data services and the functionality is not utilised by ELIN or TPC.

Compliance was not assessed.

#### Audit outcome

Not applicable

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

#### Code reference

*Clause 11.2 and Clause 10.6*

### Code related audit information

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

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

### Audit observation

The ELIN/TPCO LIS, EDA, PR-255 files and Audit Summary Reports for the audit period were checked.

### Audit commentary

PowerNet stores all metering records in a system called the Metering Database. Meter change information is input both manually for single jobs and in bulk uploads for large meter replacement work. The system updates the registry every night and also checks for discrepancies and, if there are any, they are reported for remedial action the next day. The Metering Database is a comprehensive, effective and well supported metering information system.

The PowerNet Installation Requirements and Guidelines were reviewed along with the metering installation designs used by SMCO in the PowerNet network.

The following areas identified information discrepancies:

Section	Information discrepancy
4.10	<ul style="list-style-type: none"><li>Registry updates later than 10 business days</li></ul>
5.1	<ul style="list-style-type: none"><li>Missing Q meter calibration reports etc</li></ul>
6.2	<ul style="list-style-type: none"><li>LCD information not populated in Registry</li></ul>
7.1	<ul style="list-style-type: none"><li>Expired metering installation certification</li></ul>
7.15	<ul style="list-style-type: none"><li>Meter Certification expired</li></ul>
7.16	<ul style="list-style-type: none"><li>CT equipment certification expired</li></ul>
7.19	<ul style="list-style-type: none"><li>Interim Certification expiry</li></ul>
8.2	<ul style="list-style-type: none"><li>Metering installations not inspected within required timeframe</li></ul>

### Audit outcome

Non-compliant



Non-compliance	Description		
Audit Ref: 2.5 With: clause 11.2 and Clause 10.6  From: 01-Dec-20 To: 30-Apr-22	Information for a small number of ICPs, for both TPCO and ELIN, is missing or not up to date. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	Controls are assessed as moderate. Monitoring and correction processes are in place and registry data is corrected as anomalies are identified. PowerNet is committed to accurate registry data even where backdating is required with consequent non-compliance. There was no impact on settlement outcomes. The audit risk rating is recorded as low.		
Actions taken to resolve the issue		Completion date	Remedial action status
Due to historic information there are still a small number of anomalies regardless of how much accuracy PowerNet thrive to achieve. These are being corrected as the ICPs come up for recertification and the information is relayed back to us to input correct data into the registry.		Ongoing	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Accuracy when all new data is being entered		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 3 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

The topic was discussed with PowerNet and their comment was that this clause has not been exercised since the last audit.

##### Audit commentary

ELIN/TPCO has a full understanding of their obligation that until another MEP accepts responsibility for an installation, they must meet their obligations. It is noted that PowerNet have an arrangement in place to transition metering installations from ELIN and TPCO MEPs to SMC0 MEP.

##### 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 manager of the registry metering records for the metering installation within 15 days of becoming the MEP for the metering installation.*

##### Audit observation

The ELIN/TPCO MEP EDA file and Audit Compliance reports were checked along with the registry. This was also discussed with PowerNet Staff. The process of sending data to the registry was examined

### Audit commentary

The Audit Compliance Report did not identify, neither for TPCO MEP nor ELIN MEP, nominations for existing installations during the audit period.

### Audit outcome

Compliant

## 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

The ELIN/TPCO MEP EDA file and Audit Compliance reports were checked along with the registry. This was also discussed with PowerNet Staff.

### Audit commentary

ELIN/TPCO has not been asked to provide metering records by a new MEP since the last audit. ELIN and TPCO have arrangements in place to transition metering installations to SMCO which requires the transfer of metering information to SMCO.

Since 2017 PowerNet has been installing its own smart meters under the respective MEPs. PowerNet initially installs, certifies the metering installation and populates the registry. The retailer is then asked to nominate SMCO to be the MEP for the metering installation. Acceptance by SMCO triggers a process where PowerNet provides the metering records to SMCO for upload to the registry. This transfer process occurs on a regular basis. As soon as paperwork arrives from an inspector, information is passed to the retailer asking them to nominate SMCO as the MEP. This allows the transition of responsibility of an installation to SMCO.

### 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 MEPs obligations terminate only when;*

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

#### **Audit observation**

The Code requirement was discussed with PowerNet MEP Staff. The metering data and information systems used by PowerNet MEP were examined.

#### **Audit commentary**

ELIN and TPCO's long term strategy is to be a meter equipment owner only, with MEP functions being covered by SMCO.

PowerNet stores all metering records in a system called the Metering Database. Related documents (including scanned paper based metering information) are captured in and can be retrieved from a connected document management system.

Metering records are retained by PowerNet in the Metering Database after meters are transitioned to SMCO.

Compliance is confirmed based on a review of records while working through different sections of this report.

#### **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

We reviewed the design documentation and a random sample of 10 category 1, and 5 category 2 installation/certification reports, and checked the registry. The Code requirement was discussed with PowerNet MEP Staff.

#### Audit commentary

PowerNet use the Delta Approved Test House. PowerNet have adopted Delta approved Test House metering installation designs for category 1 metering installations in the ELIN and TPCO networks. PowerNet installs EDM1 and L&G meters on category 1 sites.

Category 2 installations use Delta Approved Test house metering installation designs. PowerNet installs L&G meters class 1 and class 0.5 CTs using the selective component certification method as per Table 1 Schedule 10.1 of the Code.

While the sample ICP documentation demonstrated that commissioning test results met the Code requirements, a number of anomalies were observed in the ATH installation/certification reports that could potentially lead to some misunderstanding:

	Anomaly	Comment
1	The installation/certification reports indicate HHR metering with remote service access using mesh radio. ELIN/TPCO record its metering as NHH Non AMI.	Registry checks show recertified metering recorded as NHH no AMI.  0000800144TPDF5 – now SMC0  0008001125TP147  0000373002TP847  0000731881NV4FA  0005791151TP65B

2	The installation/certification reports indicate service access as back office remote with a 90 day interrogation cycle.	Registry checks show ELIN/TPCO record NHH non AMI meter with a 365 day interrogation cycle.  0000800144TPDF5  0008001125TP147  0000373002TP847  0000731881NV4FA  0005791151TP65B
3	<ol style="list-style-type: none"> <li>1. The commissioning report is missing the meter calibration report number</li> <li>2. The meter test/calibration date on the installation cert (29 June 20) is different to that on the commissioning report (15 October 21).</li> </ol>	0000731881NV4FA
4	The commissioning report does not show the meter configuration/programme as it is supposed to.	It is shown on Meter Report
5	In the prevailing load check section readings from Data Administrator the meter kWh and working std kWh readings are transposed.	0008001125TP147
6	<ol style="list-style-type: none"> <li>1. The Installation Cert Expiry date is 09 July 2020 but the commissioning report says 09 July 2030 (correct).</li> <li>2. The Installation Cert also shows the meter cert expiry as 09 July 2020 the same date the meter was installed</li> <li>3. The incorrect Installation cert date was originally loaded into the registry by PNET as 10 August 2020. This doesn't line up with the Installation cert or commissioning report information. SMCO did get the correct date loaded in the registry when they took over as MEP.</li> <li>4. There is a discrepancy with the meter install date (09 July 2020) and meter certification date (10 August 2020) in the commissioning report. It suggests the meter was certified 1 month after it was installed which again does not line up with the Installation cert.</li> <li>5. Incorrect max interrogation cycle of 365 days shown on the commissioning report it should be 90 days according to their own documentation.</li> </ol>	0000800144TPDF5

It is recommended that PowerNet discuss and resolve the above anomalies with Delta.

#### Audit outcome

Compliant

Issue	Recommendation	Audited party comment	Remedial action
A number of anomalies were observed in the Approved Test House (ATH) installation/certification reports that could potentially lead to some misunderstanding.	PowerNet discuss and resolve the anomalies identified with their contracted ATHs		

#### 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

The Electricity Authority website was checked and this was discussed with PowerNet MEP Staff.

##### Audit commentary

PowerNet use the Delta Approved Test Houses to certify Category 1 and 2 metering installations.

Delta is approved by the Electricity Authority to carry out the certification activities undertaken for PowerNet according to the Electricity Authority's website.

##### 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

We reviewed the design documentation and a random sample of 10 category 1, and 5 category 2 installation/certification reports, and checked the registry The Code requirement was discussed with PowerNet MEP Staff.

#### Audit commentary

The design set used by PowerNet are approved designs provided by Delta as Electricity Authority Approved Test House. Delta is Electricity Authority Approved Test Houses subject to regular audit and so subsequently the designs meet Code requirements.

PowerNet installs class 1 meters and class 0.5 CTs and uses the selective component certification method. The review of the sample metering installation/certification reports identified some anomalies, these have been addressed in **section 4.1**.

It should be noted the sample installations passed their certification tests and appear to have met Code requirements with respect to this section.

#### Audit outcome

Compliant

### 4.4. Net 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 category 3 or higher installations, the MEP does not need to ensure that imported and exported electricity is recorded separately for each phase.*

*If the metering installation contains multiple phases, the MEP may aggregate together the amounts of imported electricity recorded on different phases, or the amounts of exported electricity recorded on different phases. However, the MEP must not aggregate imported and exported electricity together. 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

We reviewed the design documentation and a random sample of 10 category 1, and 5 category 2 installation/certification reports, and checked the registry The Code requirement was discussed with PowerNet MEP Staff.

#### Audit commentary

Current ELIN/TPCO metering designs and installations do not use neither net metering nor subtractive metering to determine submission information used for the purposes of Part 15.

PowerNet is aware that there may be a very small number of historic metering installations using subtraction metering (only within the remaining interim certified installations). If subtraction metering is found during metering replacement it is removed.

#### 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

The ELIN and TPCO LIS files dated 7/6/2022 were checked and this was discussed with PowerNet MEP Staff.

##### Audit commentary

ELIN and TPCO MEPs do not have any category 3 metering installations and also do not provide MEP services for category 3 metering installations.

This clause is not applicable. Compliance was not assessed.

##### Audit outcome

Not applicable

#### 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

This was discussed with PowerNet MEP Staff.

##### Audit commentary

PowerNet MEP Staff state ELIN and TPCO are not MEPs for any NSP metering installations that are not connected to the grid.

This clause is not applicable. Compliance was not assessed.

##### 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

This was discussed with PowerNet MEP Staff.

#### Audit commentary

PowerNet MEP Staff state ELIN and TPCO are not responsible for any metering installations for a point of connection to the grid.

This clause is not applicable. Compliance was not assessed.

#### 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

We reviewed the design documentation and a random sample of 10 category 1, and 5 category 2 installation/certification reports, and checked the registry The Code requirement was discussed with PowerNet MEP Staff.

#### Audit commentary

PowerNet used the Meter Installation requirements and Guidelines used by SmartCo for the SMART meter rollout in the PowerNet network in 2015 for use by the ELIN and TPCO MEPs. They are a comprehensive set of guides and instructions for metering technicians and have proven effective in managing the quality of metering installations.

Where it is believed necessary, electrical inspectors are used to perform metering installations.

#### Audit outcome

Compliant

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

#### Code reference

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

#### Code related audit information

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

We reviewed the design documentation and a random sample of 10 category 1, and 5 category 2 installation/certification reports, and checked the registry. The Code requirement was discussed with PowerNet MEP Staff.

#### **Audit commentary**

ELIN/TPCO have adopted the Meter Installation requirements and Guidelines used by SmartCo, and specifically developed for the SMART meter rollout in the PowerNet network. These arrangements have met the requirements of the ELIN and TPCO distributor function and retailers effectively since 2015.

TPCO/ELIN do not provide MEP services to new connections to the network.

PowerNet MEP staff state that they are not aware of any metering installations that may be inappropriate with regard to the physical and electrical characteristics of the POC.

#### **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 updating the registry in accordance with 8(11)(b) of Schedule 10.6, it must do so within 10 business days after the most recent unsuccessful interrogation.*

*If the MEP is updating the registry in accordance with clause 8(13) of Schedule 10.6, it must do so within 3 business days following the expiry of the time period or date from which the MEP determines it cannot restore communications.*

#### **Audit observation**

The ELIN/TPCO EDA files and Audit Compliance reports were checked.

#### **Audit commentary**

TPCO registry update performance during the audit period was 98.41 % and ELIN 96.43 %. A summary of the discrepancies is outlined in the following table:

	<b>Registry updates</b>	<b>Registry updated Later than 10 Business days within Audit Period</b>	<b>Historic registry Updates/Data Corrections</b>

<b>ELIN</b>	702	<ul style="list-style-type: none"> <li>17 ICPs (2.4 %)</li> <li>Range 11 to 56 business days</li> </ul>	<ul style="list-style-type: none"> <li>8 ICPs ( 1.1 %)</li> <li>Range 804 to 1,172 business days</li> </ul>
<b>TPCO</b>	1,447	<ul style="list-style-type: none"> <li>40 ICPs (2.8 %)</li> <li>Range 11 to 77 business days</li> </ul>	<ul style="list-style-type: none"> <li>20 x ICPs (0.001%)</li> <li>Range 117 to 1,150 business days</li> </ul>

There was a significant decrease in the number of the registry updates (about 50%) in comparison with the previous audit period. It is mainly the result of the smaller number of ICPs for which ELIN/TPCO provide MEP services.

PowerNet endeavours to have correct and complete information in the registry and have a data monitoring and correction process in place. Transactions are checked daily before upload to the registry.

In some cases corrections to registry information are backdated and this has the unfortunate consequence of this creating non-compliance (historic registry updates).

#### Audit outcome

##### Non-compliant

Non-compliance	Description		
Audit Ref: 4.10 With: clause 3 of Schedule 11.4  From: 01-Dec-20 To: 30-Apr-22	ELIN/TPCO- Registry metering information updated later than 10 business days for a small percentage of metering installation records  Potential impact: Low  Actual impact: Low  Audit history: Multiple times  Controls: Strong  Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	Controls are assessed as strong. Monitoring and correction process are in place and registry data is corrected as anomalies are identified. PowerNet is committed to accurate registry data even where backdating is required to comply with clause 11.2 even with the consequent non-compliance. . There was no impact on settlement outcomes. The audit risk rating is recorded as low.		
Actions taken to resolve the issue		Completion date	Remedial action status
The rule for timeframe for Registry updates is well understood, and every endeavour is made to comply. However, at times circumstances will be such that to comply with rules requiring complete accuracy backdating will occur.		Ongoing	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
As data continually improves less need for back dating is expected		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

We reviewed the design documentation and a random sample of 10 category 1, and 5 category 2 installation/certification reports, and checked the registry. The Code requirement was discussed with PowerNet MEP Staff.

##### Audit commentary

ELIN/TPCO use the EDM1 Mk7 and L&G U1325 for 1 phase installations and EDM1 Mk10D and L&G U3401 for 3 phase installations for all replacement category 1 meter installations. Category 2 metering installations use L&G meters. Meter installations are supported by the SmartCo Meter Installation requirements and Guidelines specifically developed for the smart meter rollout in the PowerNet network. Metering installations are NHH with the service interface at the meter and manually read by retailer contracted data collectors.

PowerNet as ELIN/TPCO MEP, is responsible for a number of “vanilla” meters as well as the EDM1 and L&G smart meters, however they are never installed together in the same metering installation. Where a “vanilla” meter installation requires maintenance or service those meters are removed and replaced with EDM1 meters.

Meter installations are installed, commissioned and certified using the approved Delta Test House procedures. Metering installation reports are completed by the installation technicians and returned to PowerNet where the metering information is recorded in the Metering Database.

##### Audit outcome

Compliant

#### 4.12. Decommissioning of an 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

The decommissioning process was reviewed. This was discussed with PowerNet MEP Staff and the company provided 10 decommissioned ICPs.

#### Audit commentary

PowerNet as the network/distributor receives decommissioning requests from retailers and customers directly and, after approval, the network passes the request to the MEP function to have the metering removed.

The field staff complete a metering report, with all metering information including final meter reading, at the traders request. The MEP populates the information into the metering database and it is then uploaded into the registry in the daily registry update. The removed metering information is provided to the trader.

We confirmed the process was followed appropriately.

ICP	Date	Anomaly
0000314982TP23C	26/11/2021	Meter not removed from the registry
0000527023TPDC4		No date, no signature on the Meter Report, registry updated
0000626665TP5FC	11/01/2022	Incorrect final read recorded in the registry. The Meter report shows <u>130.8</u> , the registry record <u>1308</u>
0000162473TPCC7	11/01/2022	The same error, reading with decimal point was recorded as a whole number
0000181132TP8BF	23/12/2021	The same error, reading with decimal point was recorded as a whole number

#### 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**

The approach to managing measuring transformer burden and compensation requirements was discussed with the PowerNet MEP staff. 5 category 2 installation/certification reports were also checked.

#### **Audit commentary**

ELIN/TPCO have instructed the ATHs carrying out work on Cat 2 metering installations to apply burdening as required by the Code when installing or recertifying a CT metering installation.

At certification expiry ELIN/TPCO replace the metering equipment with L&G meters and carry out comparative test method certification, providing the installation is suitable for this, otherwise the CTs are replaced with TWS CTs.

At the time of this audit there were category 2 Metering Installations:

#### **ELIN**

Metering Category	Number of ICPs (2022)	Number of ICPs ( Nov 2020)	Number of ICPs (Feb 2020)
2	25	63	122

#### **TPCO**

Metering Category	Number of ICPs (2022)	Number of ICPs (Nov 2020)	Number of ICPs (Feb 2020)
2	22	52	94

#### **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**

This was discussed with PowerNet MEP staff during the audit.

#### **Audit commentary**

PowerNet MEP staff state ELIN/TPCO MEPs do not have any metering installations where meters would require changes to data storage device software. All new smart metering is transitioned to SmartCo MEP soon after installation.

#### **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**

ELIN/TPCO does not provide MEP services to grid owners.

#### **Audit commentary**

This clause is not applicable. Compliance was not assessed.

#### **Audit outcome**

Not applicable

### **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**

ELIN/TPCO does not provide MEP services to NSPs

#### **Audit commentary**

This clause is not applicable. Compliance was not assessed.



#### Audit outcome

Not applicable

#### 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

The PowerNet Metering Installation Requirements and Guidelines were reviewed and this was discussed with the PowerNet MEP staff.

##### Audit commentary

PowerNet MEP staff stated that PowerNet staff are only authorised to connect to the network. Metering technicians are not authorised to connect to the network therefore ELIN/TPCO MEP does not request temporary electrical connections from PowerNet.

#### 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

The metering database was reviewed along with 10 cat 1 and 5 cat 2 metering installation reports along with samples of meter and CT calibration reports.

Meter Reports – Compliance and Electrical Safety Compliance and Metering Database are the main sources of metering information. Information from Meter Reports is transferred manually into the Metering Database. PowerNet does not hold meter certification for some Q meters.

#### Audit commentary

PowerNet stores all metering records in the Metering Database, summary information is also able to be viewed only in PowerNet Connect by PowerNet Staff (distributor). Related documents (including scanned paper metering installation reports) are captured in a document management system. The Metering Database is a comprehensive, effective and well supported metering information system.

Paper based Metering installation reports (including certification test results for cat 2) are completed by the metering technicians and returned to PowerNet. PowerNet MEP staff enter the metering information into the Metering Database, the paper record is scanned and stored in the document management system.

There are some meter certification/calibration reports missing, for example PowerNet do not hold certification information for a number of Metec Q meters. They are installed at historic installations and are being actively replaced by EDM I or L&G meters. There are 512 ICP's with Metec Q meters currently installed. The number of Metec Q meters has decreased by 479 since the last audit.

	<b>Metering Installation Attribute</b>	<b>Primary Record Storage</b>	<b>Comment</b>
a.	The certification expiry date of each metering component in the metering installation	Metering Database Also read only in PowerNet connect	Meter Reports archived in document management <ul style="list-style-type: none"><li>512 Metec Q meter installations with information missing</li></ul>
b.	All equipment used in relation to the metering installation, including serial numbers and details of the equipment's manufacturer	Metering Database Also read only in PowerNet connect	Meter Reports archived in document management
c.	The manufacturer's or (if different) most recent test certificate for each metering component in the metering installation	Metering Database	Meter Reports archived in document management <ul style="list-style-type: none"><li>512 Metec Q meter installations with information missing</li></ul>
d.	The metering installation category and any metering installations certified at a lower category	N/A	ELIN/TPCO do not certify to lower categories
e.	All certification reports and calibration reports showing dates tested, tests carried out, and test results for all metering components in the metering installation	Metering Database for certification numbers and dates	<ul style="list-style-type: none"><li>Meter Reports, calibration reports and certification reports archived in document management</li><li>TWS CT test certificates are filed as hard copies</li></ul>
f.	The contractor who installed each metering component in the metering installation	Meter Reports archived in document management	
g.	The certification sticker, or equivalent details, for each metering component that is certified under Schedule 10.8 in the metering installation:	Metering Database	Meter Reports archived in document management
h.	Any variations or use of the 'alternate certification' process	N/A	ELIN/TPCO do not use any alternate certification process
i.	Seal identification information	Meter Reports archived in document management	
j.	Any applicable compensation factors	Metering Database	Meter Reports archived in document management

k.	The owner of each metering component within the metering installation	Metering Database	Meter Reports archived in document management
l.	Any applications installed within each metering component	Metering Database records the basic register configuration and load control function that are programmable	<ul style="list-style-type: none"> <li>• ELIN/TPCO provide only NHH/Non SMART MEP services from meter registers</li> <li>• Meter Reports archived in document management</li> </ul>
m.	The signed inspection report confirming that the metering installation complies with the requirements of Part 10.	Meter Reports archived in document management	

#### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 5.1 With: clause 4(1)(a)(b) of Schedule 10.6 & Table 1 of Schedule 11.4 From: 01-Dec-20 To: 30-Apr-22	ELIN do not have certification information for 512 Metec Q meter Installations  Potential impact: None  Actual impact: Low  Audit history: Multiple times  Controls: Moderate  Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	Controls are assessed as moderate. This is a known industry issue. The issue is being managed and will correct itself as the meters are removed from service. There was no impact on settlement. The audit risk rating is recorded as low.		
Actions taken to resolve the issue		Completion date	Remedial action status
This is an historic situation relating to meters purchased a number of years ago. As time goes on these meters are being withdrawn from service, thus the situation is diminishing and with only 991 installations remaining it is expected to replace these during the next audit period where customer approval is granted		Ongoing	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
With recent meter purchases, certification documents are obtained. No reoccurrence is expected.			

## 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

This was discussed with PowerNet MEP Staff.

### Audit commentary

PowerNet MEP Staff state that no participant has requested an inspection report during the audit period. These reports would be available 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

This was discussed with PowerNet MEP Staff.

#### Audit commentary

PowerNet MEP Staff state that PowerNet long term strategy is to be a meter equipment owner only and will to retain information on the meters. SMCO will provide the MEP functions for the PowerNet owned meters. When meters are transitioned to SMCO the meter information is retained in the Metering Database.

Compliance confirmed based on the viewing of some records in the Metering Database during auditing different parts of the Code.

#### 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

PowerNet uses DELTA ATH. There are no plans to use another ATH but if this occurs the previous certification documentations will be provided to the newly appointed ATH.

#### Audit commentary

PowerNet have no plans to change ATH arrangements in the near future, however if this were to happen PowerNet are aware of their obligation with respect to this clause.

#### 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 manager 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 manager it accepts responsibility for the ICP and of the proposed date on which it will assume responsibility.*

#### Audit observation

The ELIN/TPCO MEP EDA files and the Audit Summary report for the audit period were examined.

#### Audit commentary

A well-documented procedure for running the registry report to identify and process ELIN/TPCO MEP nominations was reviewed.

The EDA files did not record any MEP nominations. Traders have been instructed to send all MEP nominations to SMCO which will be providing MEP services.

#### 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), (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

The ELIN/TPCO MEP LIS, EDA files and the Audit Summary report for the audit period were examined. This was also discussed with PowerNet MEP Staff.

#### Audit commentary

PowerNet stores all metering records in a system called the Metering Database. The system updates the registry every night and also checks for discrepancies and, if there are any, they are reported for remedial action the next day. The Metering Database is a comprehensive, effective and well supported metering

information system. PowerNet MEP staff endeavour to maintain accurate metering information in the metering database and, consequently, the Registry.

Query	ELIN ICPs	TPCO ICPs	Comment
Active with no metering	Nil	Nil	
Accuracy of certification dates	Nil	Nil	
Certification duration	NA	Nil	
Cat 3 and above without HHR Submission or HHR Metering or HHR installations	Nil	Nil	
Compensation Factor on Category 1 Metering Installation	Nil	Nil	
CT component installed on category 1 metering installation	Nil	Nil	
HHR profile and submission type and meter or installation type is not HHR	Nil	Nil	
Blank Registry records	Nil	Nil	<ul style="list-style-type: none"> <li>ELIN Audit Compliance report identified 1 ICP. Checked and it was SMCO MEP</li> <li>TPCO Audit Compliance report identified 3 ICPs. Checked and all were SMCO MEP</li> </ul>
Compensation factor of 3	Nil	Nil	
Over category 1 with no CT's	NA	Nil	
All compensation factors	Nil	Nil	
CN only	Nil	Nil	
No control device recorded	83 (Historical)	174 (Historical)	<ul style="list-style-type: none"> <li>A further 76 ELIN ICPs are SMART meters with internal load control waiting for transition to SMCO. 49 ICPs out of 76 ICPs are traded by Trustpower and Trustpower does not nominate SMCO as the MEP.</li> <li>133 TPCO ICPs identified in the audit compliance report are SMART meters with internal load control waiting to transition to SMCO. 75 ICPs out of 133 ICPs are traded by Trustpower and Trustpower does not nominate SMCO as the MEP.</li> </ul>
Day + night not = 24	Nil	Nil	



Day without night	Nil	Nil	
Night without day	Nil	Nil	
IN24 or IN0	Nil	Nil	
UN not = 24	9	24	<ul style="list-style-type: none"> <li>Checked, PowerNet MEP Staff state they are a valid code in PowerNet Networks.</li> </ul>
UN only with a control device	2	6	<ul style="list-style-type: none"> <li>ELIN Audit Compliance identified 2 ICPs. Checked, PowerNet MEP Staff state they are historic relays no longer used for load control but left in place because the customer was using the switches. They are being removed as they are found.</li> <li>TPCO Audit Compliance identified 6 ICPs. Checked, PowerNet MEP Staff state they are historic relays no longer used for load control but left in place because the customer was using the switches. They are being removed as they are found. At the time of report being finalised there were none left.</li> </ul>

#### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref 6.2 With: clause 7(1)(2)(3) of Schedule 11.4 From: 01-Dec-20 To: 30-Apr-22	A relatively small number of control device discrepancies. <ul style="list-style-type: none"> <li>7 ELIN LCD missing records in Registry</li> <li>41 TPCO LCD missing records in Registry</li> </ul> Potential impact: None Actual impact: Low Audit history: Multiple times Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	Controls are assessed as strong because there is a robust the Metering Database and processes in place. The issue is being managed and will correct itself as metering is upgraded and transitioned to SMCO.  There was no impact on settlement outcomes. The audit risk rating is recorded as low.		
Actions taken to resolve the issue		Completion date	Remedial action status
This is being corrected as we are replacing meters for recertification.		Ongoing	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Using the Audit Compliance report run monthly to identify these discrepancies and ensuring these issues are prioritised to be corrected.		Ongoing Monthly Checks	

### 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 5 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 5 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 manager of any necessary changes to the registry metering records.*

### Audit observation

PowerNet constantly monitors the quality of data in the Metering Database and when the company learns new information, or errors are discovered, information is changed and the registry is updated. The “day 13 comparison report” was discussed with PowerNet MEP Staff.

### Audit commentary

PowerNet Staff confirmed that the “day13” is run twice per month. PowerNet MEP Staff advised that a daily file check was also in place to check for discrepancies identified during the registry upload process. A report identifies any discrepancies to be addressed the next day. PowerNet have also used the Audit Compliance report during the audit period with good affect.

### Audit outcome

Compliant

## 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 3 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

The PowerNet Metering Installation Requirements and Guidelines were reviewed. The statistical sampling process was checked along with the job management.

#### Audit commentary

During the audit we discussed scenarios listed in Clause 20(1) of Schedule 10.7 and we listed references to the appropriate sections in this report below:

	Certification Cancellation Reasons	ELIN/TPCO MEP
a.	the metering installation is modified	<ul style="list-style-type: none"> <li>ELIN/TPCO use Delta ATH. ELIN/TPCO have adopted the EDM Meter Installation requirements and Guidelines used by SmartCo for the SMART meter rollout in the PowerNet network.</li> <li>PowerNet advise they are not aware of any modifications reported during this audit period</li> </ul>
b.	the metering installation is classed as outside the applicable accuracy tolerances	<ul style="list-style-type: none"> <li>PowerNet MEP Staff advise this has not occurred during this audit period</li> <li>ELIN/TPCO uses the selective component method of certification, by definition the metering equipment meets the accuracy tolerances</li> </ul>
c.	<ol style="list-style-type: none"> <li>reference standard or working standard used to certify the metering installation not being compliant</li> <li>the failure of a group of meters in the statistical sampling recertification process for the metering installation</li> <li>the failure of a certification test for the metering installation</li> </ol>	PowerNet MEP Staff advise this has not occurred during this audit period
d.	metering component does not comply with the standards	<ul style="list-style-type: none"> <li>PowerNet MEP Staff advise this has not occurred during this audit period</li> </ul>
e.	an inspection of the metering installation, that is required under this Part, is not carried out	<ul style="list-style-type: none"> <li>ELIN/TPCO use statistical sampling to meet these obligations for Cat 1.</li> <li>PowerNet MEP Staff state Cat 2 meters are replaced and installations recertified at the 10 year point rather than inspected. Some cat 2 sites were neither recertified nor</li> </ul>

		inspected. It was noted as non-compliance in <b>section 7.1.</b>
f.	if the metering installation has been determined to be a lower category and the maximum current exceeds the current rating of its metering installation category	<ul style="list-style-type: none"> <li>PowerNet does not allow this practice</li> </ul>
g.	sufficient load is available for full certification testing and has not been retested	<ul style="list-style-type: none"> <li>ELIN/TPCO provide only NHH MEP services for cat 1 and 2 metering installations.</li> </ul>
h.	a control device in the metering installation certification is, and remains for a period of at least 10 business days, bridged out	<ul style="list-style-type: none"> <li>PowerNet Fault Call Centre handle faults on behalf of ELIN/TPCO. Refer to <b>section 7.11</b> for detail on fault procedure outside of business hours</li> <li>During Business hours PowerNet MEP, issues a job</li> </ul>
i.	a seal has been removed or broken and the accuracy and continued integrity of the metering installation has been affected.	<ul style="list-style-type: none"> <li>Reseal jobs are sent to a technician immediately with a next day service level. Refer to <b>section 8.4</b> for more detail</li> </ul>

#### Audit outcome

PowerNet advise ELIN/TPCO have not had any reason to cancel any metering installation certificates during this audit period. There have been some metering installation certifications expire during the audit period.

Compliant

### 6.5. Registry Metering Records (Clause 11.8A)

#### Code reference

Clause 11.8A

#### Code related audit information

*The MEP must provide the registry manager 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

The ELIN/TPCO MEP LIS, EDA file and Audit Compliance reports were checked. This was also discussed with PowerNet Staff.

#### Audit commentary

PowerNet stores all TPCO/ ELIN metering records the Metering Database, the system updates the registry every night using the appropriate information protocols. The system also checks for discrepancies and, if any are found, they are reported for remedial action the next day.

#### 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

PowerNet provides the MEP services on behalf of ELIN and TPCO for category 1 and 2 metering installations only. ELIN is responsible for 25 category 2 metering installations and 647 category 1 installations. TPCO is responsible for 22 category 2 installations and 1,545 category 1 installations.

The types of meters (smart and “vanilla”) used by ELIN/TPCO do not require maintenance, such as a battery replacement. Any changes to equipment installed such as meters, CTs or ripple receivers are recorded on a Meter Report and entered to the Metering Database.

The LIS, EDA file and Audit Compliance reports for the audit period were checked. This was also discussed with PowerNet MEP Staff.

#### Audit commentary

ELIN/TPCO policy is to recertify or replace Category 2 metering installations at certification expiry (or 120 months as appropriate).

The number of expired metering installation certificates during the audit period are summarised below.

MEP	Metering Category 1	Metering Category 2	Comment
TPCO	917	3	<ul style="list-style-type: none"><li>• Cat 1 includes 54 Interim certified ICPs</li><li>• 2016 – 1 ICP</li><li>• 2017 – 5 ICPs</li><li>• 2020 – 18 ICPs</li><li>• 2021 – 25 ICPs</li><li>• 2022 – 814 ICPs (21/04/2022)</li></ul> <p>Cat 2</p> <ul style="list-style-type: none"><li>• 0008001685TP65A Switchboard hazard customer to make safe prior to metering upgrade.</li><li>• 0000658467TPD07 – Job has been raised to complete</li><li>• 0008001876TPC86 – contacted customer on 11/02/2022; a building project undertaken;</li></ul>

			TPCO will be contacted when the project is finalised
ELIN	378	9	<p>377 ELIN ICPs cat 1 expired 30/03/2022 and 1 ICP 19/04/2022</p> <p>9 Cat2 ELIN metering installations ICPs are listed below:</p> <ul style="list-style-type: none"> <li>• 0007302445NVD40</li> <li>• 0000900319NV09D</li> <li>• 0000734347NV6B4</li> <li>• 008102904NV286</li> <li>• 0007302197NV582</li> <li>• 0007344596NVB93</li> <li>• 0000744540NV7C1</li> <li>• 0007227013NV247</li> <li>• 0007227012NVE02</li> <li>•</li> </ul>

1,295 ICPs were identified with expired certification. The majority of them expired on 30/03/2022 and 20/04/2022. In November 2021 TPCO/ELIN contacted Delta to undertake a statistical sampling project.

#### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref 7.1 With: Clause 10.38 (a), clause 1 and clause 15 of Schedule 10.7 From: 01-Dec-20 To: 30-Apr-22	<ul style="list-style-type: none"> <li>TPCO – 920 ICPs with expired certification</li> <li>ELIN -387 ICPs with expired certification</li> </ul> Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Weak Breach risk rating: 3		
Audit risk rating	Rationale for audit risk rating		
Low	Controls are assessed as weak. There was no impact on settlement outcomes. The audit risk rating is recorded as low.		
Actions taken to resolve the issue		Completion date	Remedial action status
Statistical sampling project that is being finalised Recent batch of meter replacements for recertification issued to reach majority of these sites given customers grant access.		Ongoing	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Statistical sampling project completed sooner			

## 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

We reviewed the design documentation and a random sample of 10 category 1, and 5 category 2 installation/certification reports, and checked the registry. The Electricity Authority website was checked for Delta ATH status. This was also discussed with PowerNet MEP Staff.

### Audit commentary

Delta provides ATH functions for ELIN/TPCO and approve PowerNet staff and contractors to operate under the ATH system.

Delta is an appropriately EA approved Test House.



## Audit outcome

Compliant

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

#### Code reference

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

#### Code related audit information

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

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

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

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

*All other installations must measure and separately record:*

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

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

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

#### Audit observation

This was discussed with PowerNet MEP Staff.

#### Audit commentary

ELIN/TPCO provide MEP services for Category 1 & 2 NHH metering installations only.

ELIN/TPCO do not provide MEP services neither HHR metering installations nor grid metering.

This clause is not applicable. Compliance was not assessed.

## Audit outcome

Not applicable

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

#### Code reference

*Clause 10.37(2)(b)*

#### Code related audit information

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

#### **Audit observation**

This was discussed with PowerNet MEP Staff.

#### **Audit commentary**

PowerNet MEP Staff state that ELIN/TPCO do not have any local service metering.

This clause is not applicable. Compliance was not assessed.

#### **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**

The PowerNet Installation Requirements and metering design documentation were reviewed and a random sample of 5 category 2 installation/certification reports were checked. This was also discussed with PowerNet MEP Staff.

#### **Audit commentary**

The company policy is to replace CTs if changes or additions to burden or compensation factor are necessary, consequently the installing ATH carries out the burdening.

ELIN/TPCO does not provide the MEP services for a POC to the grid.

PowerNet MEP Staff state that ELIN/TPCO do not allow other load to be connected to the metering transformers.

#### **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**

This was discussed with PowerNet MEP Staff.

#### **Audit commentary**

PowerNet MEP Staff state advise ELIN/TPCO have no metering installations certified as a lower category.

#### **Audit outcome**

Compliant

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

#### **Code reference**

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

#### **Code related audit information**

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

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

#### **Audit observation**

This was discussed with PowerNet MEP Staff.

#### **Audit commentary**

ELIN/TPCO does not provide the MEP services to HHR installations.

This clause is not applicable. Compliance was not assessed.

## Audit outcome

Not applicable

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

### Code reference

*Clause 14(6) of Schedule 10.7*

### Code related audit information

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

- *the metering installation certification is automatically revoked:*
- *the certifying ATH must advise the MEP of the cancellation within 1 business day:*
- *the MEP must follow the procedure for handling faulty metering installations (clause 10.43 - 10.48).*

### Audit observation

This was discussed with PowerNet MEP Staff.

### Audit commentary

ELIN/TPCO does not provide MEP services for new installations. PowerNet MEP staff state there were no metering installations where there was insufficient load for certification testing during this audit period.

## 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 Authority, 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 5 business days, to any requests from the Authority 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 Authority 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

This was discussed with PowerNet MEP Staff.

### Audit commentary

PowerNet MEP Staff state that ELIN/TPCO has not used the Alternative Certification process during the audit period.

#### 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

This was discussed with PowerNet MEP Staff.

#### Audit commentary

PowerNet State that ELIN/TPCO were responsible for a remaining 9 timeclocks during the audit period. Once per year these meters are visited to download metering data for PowerNet use. The company confirmed that last year the clocks were checked during the annual visit(October/November 2021). These meters are configured to adjust for DLS. All ICPs are reconciled as NHH using RPS profile therefore reconciliation volumes are not affected.

#### Audit outcome

Compliant

### 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, advise 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

The process was discussed with PowerNet MEP Staff.

#### Audit commentary

If a customer contacts the PowerNet Faults Call Centre advising of a lack of hot water, their own electrician is called out and authorised to bridge out the ripple receiver. If the load control device is found to be the

problem the electrician will call contact the faults call centre and authorisation to bridge the device will be given. This is logged by the Faults Call Centre, the retailer will be notified and a next day job will be raised with the MEP to remedy the fault. The Faults Call Centre advise the metering team who will arrange the meter replacement, with the site being upgraded to a smart meter installation. The MEP will send a fault job to a metering technician and, as per procedure, take the opportunity to replace the metering with a smart meter upgrade.

#### 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 3 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

The process was discussed with PowerNet MEP Staff.

#### Audit commentary

PowerNet MEP Staff state ELIN/TPCO have not had any requests to have load control devices certified during this audit period.

#### 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

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

#### Audit commentary

PowerNet MEP Staff state ELIN/TPCO did not carry out any statistical sampling under this clause during this audit period. ELIN/TPCO last carried out statistical sampling under this clause in 2017.

As noted in **section 7.1**, 1,295 ICPs have expired certification. PowerNet MEP Staff have requested Delta to conduct statistical sampling (September 2021). PowerNet began removing meters on 20/10/2021. At the beginning of the year Delta asked to extend the sample to be able to reach the required sample size as they were not going to have enough due to Inactive properties and also customers refusing access to the meters to have them removed/changed.

The following number of meters were dispatched to Dunedin for the statistical sampling process

- ELIN – 92 1PH and 15 3 PH
- TPCO – 230 1 PH and 58 3 PH

At the time of finalising this report, all meters were collected and dispatched to Dunedin.

#### 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

The NSP table was checked and it was also discussed with PowerNet MEP Staff.

#### Audit commentary

ELIN/TPCO are not responsible for any NSP metering.

This clause is not applicable. No compliance was assessed.

#### Audit outcome

Not applicable

### 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

Audit Compliance reports and PR-255 were checked. This was also discussed with PowerNet MEP Staff.

#### Audit commentary

For category 1 metering installations, the meter certification date determines the installation certificate expiry date. The following tables summarise the meter certification expiry during the audit period:

MEP	Total Installations expired	Interim Certification	Full Certification
TPCO	917	54	863
ELIN	378	0	378

For category 2 metering installations, the selected component certification method is used with the CT, meter and installation having the same certification date, expiry would occur at the same time for all elements.

The meters at the following Category 2 metering installations have not been recertified by their due date:

#### TPCO

ICP	Meter Expiry	PowerNet MEP Staff Comment
0008001685TP65A	28/06/2020	Switchboard hazard customer to make safe prior to metering upgrade.
0000658467TPD07	21/04/2022	0000658467TPD07 – Job has been raised to complete
0008001876TPC86	06/03/2022	Contacted customer on 11/02/2022; a building project undertaken; TPCO will be contacted when the project is finalised

#### ELIN

ICP	Meter Expiry	PowerNet MEP Staff Comment
0007302445NVD40	23/02/2020	Job issued to recertify installation
0000900319NV09D	10/02/2020	With retailer as requires TOU metering
0000734347NV6B4	19/03/2020	Board unsafe, cannot recertify installation, with retailer
0008102904NV286	23/02/2020	Customer advised they want to change from Cat 2 to WC metering
0007302197NV582	08/02/2020	Job issued to recertify installation
0007344596NVB93	09/05/2022	Job issued to recertify installation
0000744540NV7C1	30/03/2022	30kVA site, will be downgraded to cat 1
0007227013NV247	21/05/2022	Job with Retailer to sort location & customer of ICP
0007227012NVE02	21/05/2022	Job with Retailer to sort location & customer of ICP

Some of the metering installations identified in the last audit have all had metering upgraded and installations recertified.

#### Audit outcome

Non-compliant



Non-compliance	Description		
Audit Ref 7.15 With: Clause 26(1) of Schedule 10.7 From: 01-Dec-20 To: 30-Apr-22	<ul style="list-style-type: none"> <li>TPCO - 920 ICPs with expired meter certification</li> <li>ELIN - 387 ICPs with expired meter certification</li> </ul> Potential impact: Low Actual impact: Low Audit history: Twice previously Controls: Weak Breach risk rating: 3		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	Controls are assessed as weak. 1,295 installations have expired installation certification. The statistical sampling process had started well in advance but after 8 months meters were just dispatched to Delta ATH.  There was no impact on settlement outcomes. The audit risk rating is recorded as low.		
Actions taken to resolve the issue		Completion date	Remedial action status
A program of recertification of installations is underway for the remaining ICP's when recertification is required		Ongoing	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Certification expiry is monitored and recertification initiated.		Ongoing	

#### 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

Audit Compliance reports and PR-255 were checked . This was also discussed with PowerNet MEP Staff.

##### Audit commentary

ELIN/TPCO policy is to recertify or replace Category 2 metering installations at certification expiry.

CT certifications for a number of category 2 metering installations were sighted. CTs are certified by the manufacturer, TWS. When a CTs certification expires they are recertified by insitu certification providing they are suitable for that process, if not the CTs are replaced.

For category 2 metering installations, the selected component certification method is used with the CT, meter and installation having the same certification date, expiry would occur at the same time for all elements.

The CTs at the following Category 2 metering installations have not been recertified by their due date:

#### TPCO

ICP	Meter Expiry	PowerNet MEP Staff Comment
0008001685TP65A	28/06/2020	Switchboard hazard customer to make safe prior to metering upgrade.
0000658467TPD07	21/04/2022	0000658467TPD07 – Job has been raised to complete
0008001876TPC86	06/03/2022	Contacted customer on 11/02/2022; a building project undertaken; TPCO will be contacted when the project is finalised

#### ELIN

ICP	Meter Expiry	PowerNet MEP Staff Comment
0007302445NVD40	23/02/2020	Job issued to recertify installation
0000900319NV09D	10/02/2020	With retailer as requires TOU metering
0000734347NV6B4	19/03/2020	Board unsafe, cannot recertify installation, with retailer
0008102904NV286	23/02/2020	Cust advised they want to change from Cat2 to WC metering
0007302197NV582	08/02/2020	Job issued to recertify installation
0007344596NVB93	09/05/2022	Job issued to recertify installation
0000744540NV7C1	30/03/2022	30 kVA site, will be downgraded to cat 1
0007227013NV247	21/05/2022	Job with Retailer to sort location & customer of ICP
0007227012NVE02	21/05/2022	Job with Retailer to sort location & customer of ICP

Some of the metering installations identified in the last audit have all had metering upgraded and installations recertified.

#### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref 7.16 With: Clause 28(1) of Schedule 10.7 From: 01-Dec-20 To: 30-Apr-22	<ul style="list-style-type: none"><li>TPCO – 3 ICPs with expired CT certification</li><li>ELIN -9 ICPs with expired CT certification</li></ul> Potential impact: Low Actual impact: Low Audit history: Twice previously Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	Controls are assessed as moderate because there is a robust process in place. Circumstances impacted the recertification programme to some degree. The audit risk rating is recorded as low due to low number of ICPs.		
Actions taken to resolve the issue		Completion date	Remedial action status
Recertification project is underway trying to achieve certification			Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Certification expiry is monitored and recertification initiated.			

#### 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

The process was discussed with PowerNet MEP Staff.

##### Audit commentary

ELIN/TPCO does not provide the MEP services for installations where a data storage device is installed. This clause is not applicable. Compliance was not assessed.

##### Audit outcome

Not applicable

#### 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 given notice 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 clauses 10.43 to 10.48.*

### Audit observation

The process was discussed with PowerNet MEP Staff.

### Audit commentary

PowerNet MEP Staff are aware of clause 7(3) Schedule 10.3. PowerNet MEP Staff confirm that this situation did not occur during the audit period. If it were to occur PowerNet would take appropriate action in conjunction with the Electricity Authority. It would be an industry-wide issue.

### 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

The Audit Compliance reports and PR-255 file were reviewed. This was also discussed with PowerNet MEP Staff.

### Audit commentary

#### Expired Interim Certification

MEP	Quantity	PowerNet MEP Staff Comment
TPCO	54*	<ul style="list-style-type: none"><li>203 at last audit</li><li>9 ICPs have been are with retailers to sort out access for installers</li></ul>
ELIN	0	

\*By the time this report was finalised 36 interim certified installations were left.

Very good progress being made to recertify these metering installations.

### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref 7.19 With: Clause 18 of Schedule 10.7 From: 01-Dec-20 To: 30-Apr-22	TPCO – 54 ICPs with interim certification Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
Low	Controls are assessed as strong because there is a robust process in place. Circumstances impacted the recertification programme to some degree. Number of interim certified installations decreased significantly. The audit risk rating is recorded as low due to low number of ICPs.		
Actions taken to resolve the issue		Completion date	Remedial action status
Recertification of expired interim certified Category 1 sites was attempted via a statistical sample method in 2016. This group of ICPs failed to achieve recertification. In consultation with Retailers, PowerNet engages directly with customers for meter replacement and these ICPs have been issued to an FSP for meter replacement. Attempts have been made, which to date have been unsuccessful for a variety of reasons, eg customer refusal or technical. Efforts continue, and progress is still made. Where issues fall completely on the customer and they will not progress any solution the ICPs and have been referred to the Retailer to provide access.		Ongoing	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
There will be no reoccurrence		Ongoing	

## 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

PowerNet utilises the statistical sample method of carrying out annual inspections of category 1 metering installations, under an approved procedure. It was discussed with PowerNet MEP Staff.

#### Audit commentary

The report of inspections of category 1 metering installations for the calendar year 2020 was filed with the Authority on 26/03/2021 for both ELIN and TPCO.

## ELIN

- List of ICPs inspected if using the method under clause 45(1)(b) – sample inspection

Number of all category 1 metering installations for which the MEP is responsible, other than interim certified metering installations	2108
Number of ICPs certified or inspected within the previous 84 months	252
Applicable minimum sample size of metering inspections requiring inspection	32
Sample size selected	35
Total sample size actually inspected	35

- Summary of the instances of non-compliance (Clause 45(8)(a)(ii) or 45(8)(b)(ii))

Count of ICPs	Description of non-compliance
2	Certification ATH recorded incorrectly
1	Certification date recorded incorrectly

## TPCO

- List of ICPs inspected if using the method under clause 45(1)(b) – sample inspection

Number of all category 1 metering installations for which the MEP is responsible, other than interim certified metering installations	4748
Number of ICPs certified or inspected within the previous 84 months	804
Applicable minimum sample size of metering inspections requiring inspection	80
Sample size selected	90
Total sample size actually inspected	81

- Summary of the instances of non-compliance (Clause 45(8)(a)(ii) or 45(8)(b)(ii))

Count of ICPs	Description of non-compliance
8	Meter or LCD seals missing or broken
7	Certification sticker missing or unreadable
2	Certification ATH recorded incorrectly
3	Certification Date recorded incorrectly

The report of inspections of category 1 metering installations for the calendar year 2021 was filed with the Authority on 31/03/2022 for both ELIN and TPCO.

## ELIN

- List of ICPs inspected if using the method under clause 45(1)(b) – sample inspection

Number of all category 1 metering installations for which the MEP is responsible, other than interim certified metering installations	806
Number of ICPs certified or inspected within the previous 84 months	635
Applicable minimum sample size of metering inspections requiring inspection	32
Sample size selected	55
Total sample size actually inspected	35

- Summary of the instances of non-compliance (Clause 45(8)(a)(ii) or 45(8)(b)(ii))

Count of ICPs	Description of non-compliance
1	Missing LCD seals
1	Certification date recorded incorrectly

## TPCO

- List of ICPs inspected if using the method under clause 45(1)(b) – sample inspection

Number of all category 1 metering installations for which the MEP is responsible, other than interim certified metering installations	2390
Number of ICPs certified or inspected within the previous 84 months	2358
Applicable minimum sample size of metering inspections requiring inspection	80
Sample size selected	88
Total sample size actually inspected	73

- Summary of the instances of non-compliance (Clause 45(8)(a)(ii) or 45(8)(b)(ii))

Count of ICPs	Description of non-compliance
16	Meter or LCD seals missing and broken
12	Certification sticker missing or unreadable
8	Certification Date recorded incorrectly

## 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:*

- 126 months for Category 2
- 63 months for Category 3
- 33 months for Category 4
- 19 months for Category 5.

## Audit observation

We reviewed the PR-255 file dated 16/05/2022 and checked the registry. This was also discussed with the PowerNet MEP Staff.

## Audit commentary

ELIN/TPCO policy is to recertify or replace Category 2 metering installations at certification expiry (or 120 months as appropriate).

The Category 2 metering installations at the following ICPs have not been recertified by the due date and have not been inspected within the applicable period of 120 months:

### TPCO

ICP	Meter Expiry
0008001685TP65A	28/06/2020
0000658467TPD07	21/04/2022
0008001876TPC86	06/03/2022

### ELIN

ICP	Meter Expiry
0007302445NVD40	23/02/2020
0000900319NV09D	10/02/2020
0000734347NV6B4	19/03/2020
0008102904NV286	23/02/2020
0007302197NV582	08/02/2020
0007344596NVB93	09/05/2022
0000744540NV7C1	30/03/2022

0007227013NV247	21/05/2022
0007227012NVE02	21/05/2022

Some of the metering installations identified in the last audit have had metering upgraded and CTs and installations recertified.

#### Audit outcome

##### Non-compliant

Non-compliance	Description		
Audit Ref 8.2 With: Clause 46(1) of Schedule 10.7 From: 01-Dec-20 To: 30-Apr-22	3 category 2 installations for which TPCO is responsible were not inspected and 9 category 2 installations for ELIN were not inspected within the applicable period  Potential impact: Low  Actual impact: Low  Audit history: Multiple times  Controls: Moderate  Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	Controls are assessed as moderate because there is a robust process in place. Circumstances impacted the recertification programme to some degree.  The audit risk rating is recorded as low due to low number of ICPs.		
Actions taken to resolve the issue		Completion date	Remedial action status
For Cat 2 installations inspections fall due at the same time as certification expires, therefore there is no intention to carry out inspections. Installations will be recertified as has been outlined earlier in this report.		Ongoing	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Ongoing recertification			

### 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**

The Meter inspection process was checked along with the current inspection results. This was also discussed with the PowerNet MEP Staff.

#### **Audit commentary**

PowerNet engage electrical inspectors to carry out sample metering installation inspections. The inspectors are approved to work under Delta approved test house.

The PowerNet process requires inspection reports to be compared to existing data and any discrepancies to be corrected if noted. The reports are archived and made available to participants when requested.

Inspection reports are returned to PowerNet regularly and the report information verified with the Metering Database records, updates are made if required. The Metering Database will update the registry with the nightly registry update.

Compliant

### **8.4. Broken or removed seals (Clause 48(1G), (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*

- who removed or broke the seal*
- 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*

- 3 business days, if the metering installation is category 3 or higher*
- 10 business days if the metering installation is category 2*
- 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**

The missing or broken seal process was checked and this was discussed with PowerNet MEP Staff. One broken seal job was reviewed.

#### **Audit commentary**

If advised that seals are missing or broken PowerNet MEP Staff will issue a fault job to an approved contractor to investigate, remedy if appropriate and report the result back to PowerNet (service level is next day). In most cases the opportunity will be taken to replace the metering with a new SMART meter.

If broken seals are found during an inspection the seal is remedied immediately and the situation reported back to PowerNet.

The one job reviewed was remedied and the information updated in the Registry within 10 business days.

#### Audit outcome

Compliant

## 9. PROCESS FOR HANDLING FAULTY METERING INSTALLATIONS

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

#### Code reference

*Clause 10.43(4) and (5)*

#### Code related audit information

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

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

#### Audit observation

The process for handling meter faults was checked and was also discussed with PowerNet MEP Staff. 2 category 1 meter fault jobs were checked.

#### Audit commentary

ELIN/TPCO are the MEPs for installations of category 1 and 2 only.

Once PowerNet is made aware, by a trader or one of their contractors, of a meter being inaccurate or defective, a job request is created and a contractor goes on site. According to the process a contractor's role is to investigate the situation and to fix it. Once the job is complete the trader is notified and the registry updated, if equipment is changed.

PowerNet have a standard instruction in place to replace the existing metering in all cases with a smart meter. Faulty load control devices are resolved by replacing the metering with a smart meter with inclusive load control.

If a faulty meter or ripple receiver is identified a smart meter is installed. The 2 jobs reviewed were remedied, the information communicated back to the retailer and updated in the registry within 10 business days.

#### Audit outcome

Compliant

### 9.2. Testing of Faulty Metering Installations (Clause 10.44)

#### Code reference

*Clause 10.44*

#### Code related audit information

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

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

- a) test the metering installation*
- b) provide the MEP with a statement of situation within 5 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**

The process for handling meter faults was checked and was also discussed with PowerNet MEP Staff.

#### **Audit commentary**

PowerNet MEP Staff state that a standard instruction is in place to replace the metering in all cases so every meter fault becomes a meter replacement by default. If the Retailer requests removed metering to be tested for accuracy the meters will be sent to an ATH for the tests to be carried out.

Once the inaccurate or defective metering installation is attended to and fixed, a Meter Report has all the details of what happened on site. The Meter Reports are passed the same day, or following day, to the PowerNet office and all details are entered into the Metering Database. A copy of the Meter Report is passed to the trader.

PowerNet was not able provide any example of a faulty meter.

#### **Audit outcome**

Compliant

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

#### **Code reference**

*Clause10.46(2)*

#### **Code related audit information**

*Within 3 business days of receiving the statement from the ATH, the MEP must provide copies of the statement to:*

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

#### **Audit observation**

The process for handling meter faults was checked and was also discussed with PowerNet MEP Staff. 2 x category 1 meter fault jobs were checked.

#### **Audit commentary**

ELIN/TPCO are the MEPs for installations of category 1 and 2 only.

PowerNet MEP Staff state that a standard instruction is in place to replace the metering in all cases so every meter fault becomes a meter replacement by default. The Meter Report is received at PowerNet next day and information entered into The Metering Database immediately. A copy of the meter installation report is sent to the retailer by email and the registry is uploaded with the new metering information overnight.

If the retailer requests removed metering to be tested for accuracy the meters will be sent to an ATH for the tests to be carried out.

#### **Audit outcome**

Compliant

#### 9.4. Timeframe to correct defects and inaccuracies (Clause 10.46A)

##### 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

The process for handling meter faults was checked and was also discussed with PowerNet MEP Staff. 2 category 1 meter fault jobs were checked.

##### Audit commentary

The 2 jobs reviewed were remedied and the information communicated back to the retailer updated in the registry within 10 business days.

##### Audit outcome

Compliant

#### 9.5. Meter bridging (Clause 10.33C)

##### Code reference

*Clause 10.33C*

##### 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 1 business day, and include the date of bridging in its advice.*

##### Audit observation

We checked one example of a bridged meter to confirm compliance.

##### Audit commentary

We checked one example of a bridged meter and the bridging was necessary because remote reconnection was not possible and the customers would be disadvantaged without reconnection occurring.

PowerNet issued a meter replacement job to their installer the same day to get meters changed as PowerNet do not just replace ripples .

**Audit outcome**

Compliant



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

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

#### Code reference

*Clause 1 of Schedule 10.6*

#### Code related audit information

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

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

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

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

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

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

#### Audit observation

The PowerNet Metering Installation Requirements and Guidelines were reviewed along with the design documentation, this was also discussed with the PowerNet MEP staff.

#### Audit commentary

The services access interface for all ELIN/TPCO MEP meters is at the meter. Meters are manually read by retailers. Retailers are provided with all metering information needed and given access to the meters to enable meter readings to be collected. PowerNet MEP staff state that ELIN/TPCO do not have headend infrastructure to electronically interrogate meters, consequently they have no access to raw data.

This clause is not applicable. Compliance was not assessed.

#### Audit outcome

Not applicable

### 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

The PowerNet Metering Installation Requirements and Guidelines were reviewed along with the design documentation. This was discussed with the PowerNet MEP staff.

#### Audit commentary

The services access interface for all ELIN/TPCO MEP meters is at the meter. Meters are manually read by retailers. Retailers are provided with all metering information needed and given access to the meters to enable meter readings to be collected. PowerNet MEP staff state that ELIN/TPCO do not have headend infrastructure to electronically interrogate meters, consequently they have no access to raw data.

This clause is not applicable. Compliance was not assessed.

#### **Audit outcome**

Not applicable

### **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**

The PowerNet Metering Installation Requirements and Guidelines were reviewed along with the design documentation. This was discussed with the PowerNet MEP staff.

#### **Audit commentary**

PowerNet MEP staff state that during this audit period they have had no requests for physical access to metering installations under this clause. The staff advise it would use its best endeavours to provide physical access to a metering installation but Health and Safety issues must be observed all the time.

#### **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**

The PowerNet Metering Installation Requirements and Guidelines were reviewed along with the design documentation, this was also discussed with the PowerNet MEP staff.

#### Audit commentary

PowerNet MEP staff state that during this audit period they have had no requests for physical access to metering installations under this clause. The staff advise it would use its best endeavours to provide physical access to a metering installation but Health and Safety issues must be observed all the time.

#### 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  $\pm 5$  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 any 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

The PowerNet Metering Installation Requirements and Guidelines were reviewed along with the design documentation, this was also discussed with the PowerNet MEP staff.

#### **Audit commentary**

The services access interface for all ELIN/TPCO MEP meters is at the meter. Meters are manually read by retailers. Retailers are provided with all metering information needed and given access to the meters to enable meter readings to be collected. PowerNet MEP staff state that ELIN/TPCO do not have headend infrastructure to electronically interrogate meters.

This clause is not applicable. Compliance was not assessed.

#### **Audit outcome**

Not applicable

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

#### **Code reference**

*Clause 10.15(2)*

#### **Code related audit information**

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

#### **Audit observation**

The PowerNet Metering Installation Requirements and Guidelines were reviewed along with the design documentation, this was also discussed with the PowerNet MEP staff.

#### **Audit commentary**

The services access interface for all ELIN/TPCO MEP meters is at the meter. Meters are manually read by retailers. Retailers are provided with all metering information needed and given access to the meters to enable meter readings to be collected. PowerNet MEP staff state that ELIN/TPCO do not have headend infrastructure to electronically interrogate meters, consequently they have no access to metering data.

This clause is not applicable. Compliance was not assessed.

#### **Audit outcome**

Not applicable

### **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**

The PowerNet Metering Installation Requirements and Guidelines were reviewed along with the design documentation, this was also discussed with the PowerNet MEP staff.

#### **Audit commentary**

PowerNet MEP staff confirm that ELIN/TPCO do not have headend infrastructure to electronically access or interrogate meters.

This clause is not applicable. Compliance was not assessed.

#### **Audit outcome**

Not applicable

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

#### **Code reference**

*Clause 8(7) of Schedule 10.6*

#### **Code related audit information**

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

- a) ensure an interrogation log is generated*
- b) review the event log and:
  - i. take appropriate action*
  - ii. pass the relevant entries to the reconciliation participant.**
- c) ensure the log forms part of an audit trail which includes:
  - i. the date and*
  - ii. time of the interrogation*
  - iii. operator (where available)*
  - iv. unique ID of the data storage device*
  - v. any clock errors outside specified limits*
  - vi. method of interrogation*
  - vii. identifier of the reading device used (if applicable).**

#### **Audit observation**

The PowerNet Metering Installation Requirements and Guidelines were reviewed along with the design documentation, this was also discussed with the PowerNet MEP staff.

#### **Audit commentary**

PowerNet MEP staff confirm that ELIN/TPCO do not have headend infrastructure to electronically access or interrogate meters.

This clause is not applicable. Compliance was not assessed.

#### **Audit outcome**

Not applicable

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

#### **Code reference**

*Clause 8(9) of Schedule 10.6*

#### **Code related audit information**

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

#### Audit observation

The PowerNet Metering Installation Requirements and Guidelines were reviewed along with the design documentation, this was also discussed with the PowerNet MEP staff.

#### Audit commentary

PowerNet MEP staff confirm that ELIN/TPCO do not have headend infrastructure to electronically access or interrogate meters, consequently they have no access to raw data.

This clause is not applicable. Compliance was not assessed.

#### Audit outcome

Not applicable

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

#### Code reference

*Clause 10.48(2),(3)*

#### Code related audit information

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

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

#### Audit observation

The PowerNet Metering Installation Requirements and Guidelines were reviewed along with the design documentation, this was also discussed with the PowerNet MEP staff.

#### Audit commentary

PowerNet MEP staff confirm that ELIN/TPCO do not have headend infrastructure to electronically access or interrogate meters, consequently they have no access to raw data.

This clause is not applicable. Compliance was not assessed.

#### Audit outcome

Not applicable

### 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

The PowerNet Metering Installation Requirements and Guidelines were reviewed along with the design documentation, this was also discussed with the PowerNet MEP staff.

#### Audit commentary

PowerNet MEP staff confirm that ELIN/TPCO do not have headend infrastructure to electronically access or interrogate meters, consequently they have no access to raw data.

This clause is not applicable. Compliance was not assessed.

#### **Audit outcome**

Not applicable

### **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 reason why or update the registry to show the meter is no longer AMI.*

*If the MEP chooses 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**

The PowerNet Metering Installation Requirements and Guidelines were reviewed along with the design documentation, this was also discussed with the PowerNet MEP staff.

#### **Audit commentary**

PowerNet MEP staff confirm that ELIN/TPCO do not have headend infrastructure to electronically access or interrogate meters.

This clause is not applicable. Compliance was not assessed.

#### **Audit outcome**

Not applicable

## CONCLUSION

### PARTICIPANT RESPONSE

PowerNet strive for full compliance. Even with the recent change of Metering Assets Manager role, we are happy to see the efforts put in since the last Audit have been effective.

We are still utilising the analysis tools monthly to identify and rectify the historic registry non-conformances for ELIN and TPCO, and will continue our efforts to ensure our data inputted into the Registry is accurate.